

Power Systems

*Installing the IBM Power S1022
(9105-22A), IBM Power S1022s
(9105-22B), and IBM Power L1022
(9786-22H)*



Note

Before using this information and the product it supports, read the information in [“Safety notices”](#) on page v, [“Notices”](#) on page 45, the *IBM Systems Safety Notices* manuals, G229-1110 and G229-9054, and the *IBM Environmental Notices and User Guide*, Z125-5823.

This edition applies to IBM Power Systems servers that contain the POWER10 processor and to all associated models.

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Contents

Safety notices.....	V
Installing the IBM Power S1022 (9105-22A), IBM Power S1022s (9105-22B), and IBM Power L1022 (9786-22H) servers.....	1
Installing a rack-based server.....	1
Prerequisite for installing the rack-mounted server.....	1
Completing inventory for your server.....	1
Determining and marking the location in the rack.....	2
Attach the inner rails to the system chassis.....	4
Attaching the mounting hardware to the rack.....	4
Installing the system into the rack.....	8
Installing the cable-management arm.....	13
Cabling the server and setting up a console.....	16
Cabling the server and connecting expansion units.....	22
Completing the server setup.....	23
Installing a stand-alone server.....	25
Prerequisite for installing the stand-alone server.....	25
Moving the server to the installation site.....	26
Completing inventory for your stand-alone server.....	26
Cabling the server and setting up a console.....	26
Completing the server setup.....	34
Setting up a preinstalled server.....	36
Prerequisite for installing the preinstalled server.....	36
Completing inventory for your preinstalled server.....	37
Removing the shipping bracket and connecting power cords and power distribution unit (PDU) for your preinstalled server.....	37
Setting up a console.....	38
Connecting expansion units.....	42
Completing the server setup.....	42
Notices.....	45
Accessibility features for IBM Power servers.....	46
Privacy policy considerations	47
Trademarks.....	47
Electronic emission notices.....	47
Class A Notices.....	48
Class B Notices.....	51
Terms and conditions.....	54

Safety notices

Safety notices may be printed throughout this guide:

- **DANGER** notices call attention to a situation that is potentially lethal or extremely hazardous to people.
- **CAUTION** notices call attention to a situation that is potentially hazardous to people because of some existing condition.
- **Attention** notices call attention to the possibility of damage to a program, device, system, or data.

World Trade safety information

Several countries require the safety information contained in product publications to be presented in their national languages. If this requirement applies to your country, safety information documentation is included in the publications package (such as in printed documentation, on DVD, or as part of the product) shipped with the product. The documentation contains the safety information in your national language with references to the U.S. English source. Before using a U.S. English publication to install, operate, or service this product, you must first become familiar with the related safety information documentation. You should also refer to the safety information documentation any time you do not clearly understand any safety information in the U.S. English publications.

Replacement or additional copies of safety information documentation can be obtained by calling the IBM Hotline at 1-800-300-8751.

German safety information

Das Produkt ist nicht für den Einsatz an Bildschirmarbeitsplätzen im Sinne § 2 der Bildschirmarbeitsverordnung geeignet.

Laser safety information

IBM® servers can use I/O cards or features that are fiber-optic based and that utilize lasers or LEDs.

Laser compliance

IBM servers may be installed inside or outside of an IT equipment rack.



DANGER: When working on or around the system, observe the following precautions:

Electrical voltage and current from power, telephone, and communication cables are hazardous. To avoid a shock hazard: If IBM supplied the power cord(s), connect power to this unit only with the IBM provided power cord. Do not use the IBM provided power cord for any other product. Do not open or service any power supply assembly. Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.



- The product might be equipped with multiple power cords. To remove all hazardous voltages, disconnect all power cords. For AC power, disconnect all power cords from their AC power source. For racks with a DC power distribution panel (PDP), disconnect the customer's DC power source to the PDP.
- When connecting power to the product ensure all power cables are properly connected. For racks with AC power, connect all power cords to a properly wired and grounded electrical outlet. Ensure that the outlet supplies proper voltage and phase rotation according to the system rating plate. For racks with a DC power distribution panel (PDP), connect the customer's DC power source to the PDP. Ensure that the proper polarity is used when attaching the DC power and DC power return wiring.
- Connect any equipment that will be attached to this product to properly wired outlets.

- When possible, use one hand only to connect or disconnect signal cables.
- Never turn on any equipment when there is evidence of fire, water, or structural damage.
- Do not attempt to switch on power to the machine until all possible unsafe conditions are corrected.
- When performing a machine inspection: Assume that an electrical safety hazard is present. Perform all continuity, grounding, and power checks specified during the subsystem installation procedures to ensure that the machine meets safety requirements. Do not attempt to switch power to the machine until all possible unsafe conditions are corrected. Before you open the device covers, unless instructed otherwise in the installation and configuration procedures: Disconnect the attached AC power cords, turn off the applicable circuit breakers located in the rack power distribution panel (PDP), and disconnect any telecommunications systems, networks, and modems.
- Connect and disconnect cables as described in the following procedures when installing, moving, or opening covers on this product or attached devices.

To Disconnect: 1) Turn off everything (unless instructed otherwise). 2) For AC power, remove the power cords from the outlets. 3) For racks with a DC power distribution panel (PDP), turn off the circuit breakers located in the PDP and remove the power from the Customer's DC power source. 4) Remove the signal cables from the connectors. 5) Remove all cables from the devices.

To Connect: 1) Turn off everything (unless instructed otherwise). 2) Attach all cables to the devices. 3) Attach the signal cables to the connectors. 4) For AC power, attach the power cords to the outlets. 5) For racks with a DC power distribution panel (PDP), restore the power from the Customer's DC power source and turn on the circuit breakers located in the PDP. 6) Turn on the devices.



- Sharp edges, corners and joints may be present in and around the system. Use care when handling equipment to avoid cuts, scrapes and pinching. (D005)

(R001 part 1 of 2):



DANGER: Observe the following precautions when working on or around your IT rack system:

- Heavy equipment—personal injury or equipment damage might result if mishandled.
- Always lower the leveling pads on the rack cabinet.
- Always install stabilizer brackets on the rack cabinet if provided, unless the earthquake option is to be installed.
- To avoid hazardous conditions due to uneven mechanical loading, always install the heaviest devices in the bottom of the rack cabinet. Always install servers and optional devices starting from the bottom of the rack cabinet.
- Rack-mounted devices are not to be used as shelves or work spaces. Do not place objects on top of rack-mounted devices. In addition, do not lean on rack mounted devices and do not use them to stabilize your body position (for example, when working from a ladder).



- Stability hazard:
 - The rack may tip over causing serious personal injury.
 - Before extending the rack to the installation position, read the installation instructions.
 - Do not put any load on the slide-rail mounted equipment mounted in the installation position.
 - Do not leave the slide-rail mounted equipment in the installation position.
- Each rack cabinet might have more than one power cord.
 - For AC powered racks, be sure to disconnect all power cords in the rack cabinet when directed to disconnect power during servicing.

- For racks with a DC power distribution panel (PDP), turn off the circuit breaker that controls the power to the system unit(s), or disconnect the customer's DC power source, when directed to disconnect power during servicing.
- Connect all devices installed in a rack cabinet to power devices installed in the same rack cabinet. Do not plug a power cord from a device installed in one rack cabinet into a power device installed in a different rack cabinet.
- An electrical outlet that is not correctly wired could place hazardous voltage on the metal parts of the system or the devices that attach to the system. It is the responsibility of the customer to ensure that the outlet is correctly wired and grounded to prevent an electrical shock. (R001 part 1 of 2)

(R001 part 2 of 2):



CAUTION:

- Do not install a unit in a rack where the internal rack ambient temperatures will exceed the manufacturer's recommended ambient temperature for all your rack-mounted devices.
- Do not install a unit in a rack where the air flow is compromised. Ensure that air flow is not blocked or reduced on any side, front, or back of a unit used for air flow through the unit.
- Consideration should be given to the connection of the equipment to the supply circuit so that overloading of the circuits does not compromise the supply wiring or overcurrent protection. To provide the correct power connection to a rack, refer to the rating labels located on the equipment in the rack to determine the total power requirement of the supply circuit.
- *(For sliding drawers.)* Do not pull out or install any drawer or feature if the rack stabilizer brackets are not attached to the rack or if the rack is not bolted to the floor. Do not pull out more than one drawer at a time. The rack might become unstable if you pull out more than one drawer at a time.



- *(For fixed drawers.)* This drawer is a fixed drawer and must not be moved for servicing unless specified by the manufacturer. Attempting to move the drawer partially or completely out of the rack might cause the rack to become unstable or cause the drawer to fall out of the rack. (R001 part 2 of 2)



CAUTION: Removing components from the upper positions in the rack cabinet improves rack stability during relocation. Follow these general guidelines whenever you relocate a populated rack cabinet within a room or building.

- Reduce the weight of the rack cabinet by removing equipment starting at the top of the rack cabinet. When possible, restore the rack cabinet to the configuration of the rack cabinet as you received it. If this configuration is not known, you must observe the following precautions:
 - Remove all devices in the 32U position (compliance ID RACK-001 or 22U (compliance ID RR001) and above.
 - Ensure that the heaviest devices are installed in the bottom of the rack cabinet.

- Ensure that there are little-to-no empty U-levels between devices installed in the rack cabinet below the 32U (compliance ID RACK-001 or 22U (compliance ID RR001) level, unless the received configuration specifically allowed it.
- If the rack cabinet you are relocating is part of a suite of rack cabinets, detach the rack cabinet from the suite.
- If the rack cabinet you are relocating was supplied with removable outriggers they must be reinstalled before the cabinet is relocated.
- Inspect the route that you plan to take to eliminate potential hazards.
- Verify that the route that you choose can support the weight of the loaded rack cabinet. Refer to the documentation that comes with your rack cabinet for the weight of a loaded rack cabinet.
- Verify that all door openings are at least 760 x 2083 mm (30 x 82 in.).
- Ensure that all devices, shelves, drawers, doors, and cables are secure.
- Ensure that the four leveling pads are raised to their highest position.
- Ensure that there is no stabilizer bracket installed on the rack cabinet during movement.
- Do not use a ramp inclined at more than 10 degrees.
- When the rack cabinet is in the new location, complete the following steps:
 - Lower the four leveling pads.
 - Install stabilizer brackets on the rack cabinet or in an earthquake environment bolt the rack to the floor.
 - If you removed any devices from the rack cabinet, repopulate the rack cabinet from the lowest position to the highest position.
- If a long-distance relocation is required, restore the rack cabinet to the configuration of the rack cabinet as you received it. Pack the rack cabinet in the original packaging material, or equivalent. Also lower the leveling pads to raise the casters off of the pallet and bolt the rack cabinet to the pallet.

(R002)

(L001)



DANGER: Hazardous voltage, current, or energy levels are present inside any component that has this label attached. Do not open any cover or barrier that contains this label. (L001)

(L002)



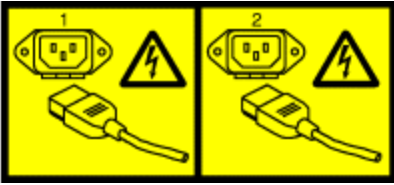
DANGER: Rack-mounted devices are not to be used as shelves or work spaces. Do not place objects on top of rack-mounted devices. In addition, do not lean on rack-mounted devices and do not use them to stabilize your body position (for example, when working from a ladder). Stability hazard:

- The rack may tip over causing serious personal injury.

- Before extending the rack to the installation position, read the installation instructions.
- Do not put any load on the slide-rail mounted equipment mounted in the installation position.
- Do not leave the slide-rail mounted equipment in the installation position.

(L002)

(L003)



or



or

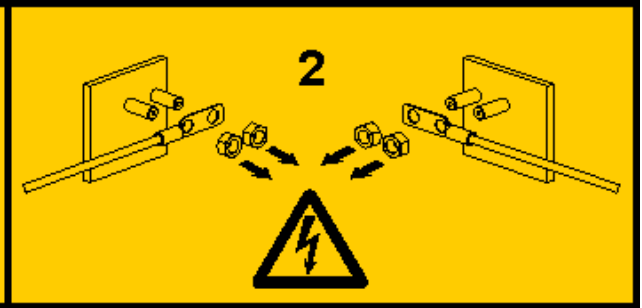
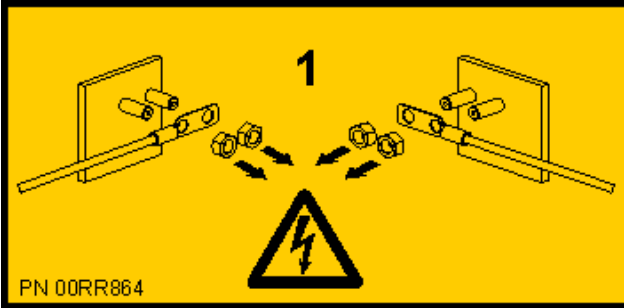


or



or





DANGER: Multiple power cords. The product might be equipped with multiple AC power cords or multiple DC power cables. To remove all hazardous voltages, disconnect all power cords and power cables. (L003)

(L007)



CAUTION: A hot surface nearby. (L007)

(L008)



CAUTION: Hazardous moving parts nearby. (L008)

(L018)



or



CAUTION: High levels of acoustical noise are (or could be under certain circumstances) present. Use approved hearing protection and/ or provide mitigation or limit exposure. (L018)

(L031)

**CAUTION:**

Enclosure Integrity.

- Access covers are intended only for occasional removal.
- Follow documented procedures when opening during live or temporary service.
- When service is complete, promptly reinstall all covers, lids, and/or doors for correct operation. (L031)

All lasers are certified in the U.S. to conform to the requirements of DHHS 21 CFR Subchapter J for class 1 laser products. Outside the U.S., they are certified to be in compliance with IEC 60825 as a class 1 laser product. Consult the label on each part for laser certification numbers and approval information.



CAUTION: This product might contain one or more of the following devices: CD-ROM drive, DVD-ROM drive, DVD-RAM drive, or laser module, which are Class 1 laser products. Note the following information:

- Do not remove the covers. Removing the covers of the laser product could result in exposure to hazardous laser radiation. There are no serviceable parts inside the device.
- Use of the controls or adjustments or performance of procedures other than those specified herein might result in hazardous radiation exposure.

(C026)



CAUTION: Data processing environments can contain equipment transmitting on system links with laser modules that operate at greater than Class 1 power levels. For this reason, never look into the end of an optical fiber cable or open receptacle. Although shining light into one end and looking into the other end of a disconnected optical fiber to verify the continuity of optic fibers may not injure the eye, this procedure is potentially dangerous. Therefore, verifying the continuity of optical fibers by shining light into one end and looking at the other end is not recommended. To verify continuity of a fiber optic cable, use an optical light source and power meter. (C027)



CAUTION: This product contains a Class 1M laser. Do not view directly with optical instruments. (C028)



CAUTION: Some laser products contain an embedded Class 3A or Class 3B laser diode. Note the following information:

- Laser radiation when open.
- Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam. (C030)

(C030)



CAUTION: The battery contains lithium. To avoid possible explosion, do not burn or charge the battery.

Do Not:

- Throw or immerse into water
- Heat to more than 100 degrees C (212 degrees F)
- Repair or disassemble

Exchange only with the IBM-approved part. Recycle or discard the battery as instructed by local regulations. In the United States, IBM has a process for the collection of this battery. For information, call 1-800-426-4333. Have the IBM part number for the battery unit available when you call. (C003)



CAUTION: Regarding IBM provided VENDOR LIFT TOOL:

- Operation of LIFT TOOL by authorized personnel only.
- LIFT TOOL intended for use to assist, lift, install, remove units (load) up into rack elevations. It is not to be used loaded transporting over major ramps nor as a replacement for such designated tools like pallet jacks, walkies, fork trucks and such related relocation practices. When this is not practicable, specially trained persons or services must be used (for instance, riggers or movers).
- Read and completely understand the contents of LIFT TOOL operator's manual before using. Failure to read, understand, obey safety rules, and follow instructions may result in property damage and/or personal injury. If there are questions, contact the vendor's service and support. Local paper manual must remain with machine in provided storage sleeve area. Latest revision manual available on vendor's web site.
- Test verify stabilizer brake function before each use. Do not over-force moving or rolling the LIFT TOOL with stabilizer brake engaged.
- Do not raise, lower or slide platform load shelf unless stabilizer (brake pedal jack) is fully engaged. Keep stabilizer brake engaged when not in use or motion.
- Do not move LIFT TOOL while platform is raised, except for minor positioning.
- Do not exceed rated load capacity. See LOAD CAPACITY CHART regarding maximum loads at center versus edge of extended platform.
- Only raise load if properly centered on platform. Do not place more than 200 lb (91 kg) on edge of sliding platform shelf also considering the load's center of mass/gravity (CoG).
- Do not corner load the platforms, tilt riser, angled unit install wedge or other such accessory options. Secure such platforms -- riser tilt, wedge, etc options to main lift shelf or forks in all four (4x or all other provisioned mounting) locations with provided hardware only, prior to use. Load objects are designed to slide on/off smooth platforms without appreciable force, so take care not to push or lean. Keep riser tilt [adjustable angling platform] option flat at all times except for final minor angle adjustment when needed.
- Do not stand under overhanging load.
- Do not use on uneven surface, incline or decline (major ramps).
- Do not stack loads.
- Do not operate while under the influence of drugs or alcohol.
- Do not support ladder against LIFT TOOL (unless the specific allowance is provided for one following qualified procedures for working at elevations with this TOOL).
- Tipping hazard. Do not push or lean against load with raised platform.
- Do not use as a personnel lifting platform or step. No riders.
- Do not stand on any part of lift. Not a step.
- Do not climb on mast.
- Do not operate a damaged or malfunctioning LIFT TOOL machine.
- Crush and pinch point hazard below platform. Only lower load in areas clear of personnel and obstructions. Keep hands and feet clear during operation.
- No Forks. Never lift or move bare LIFT TOOL MACHINE with pallet truck, jack or fork lift.
- Mast extends higher than platform. Be aware of ceiling height, cable trays, sprinklers, lights, and other overhead objects.
- Do not leave LIFT TOOL machine unattended with an elevated load.
- Watch and keep hands, fingers, and clothing clear when equipment is in motion.

- Turn Winch with hand power only. If winch handle cannot be cranked easily with one hand, it is probably over-loaded. Do not continue to turn winch past top or bottom of platform travel. Excessive unwinding will detach handle and damage cable. Always hold handle when lowering, unwinding. Always assure self that winch is holding load before releasing winch handle.
- A winch accident could cause serious injury. Not for moving humans. Make certain clicking sound is heard as the equipment is being raised. Be sure winch is locked in position before releasing handle. Read instruction page before operating this winch. Never allow winch to unwind freely. Freewheeling will cause uneven cable wrapping around winch drum, damage cable, and may cause serious injury.
- This TOOL must be maintained correctly for IBM Service personnel to use it. IBM shall inspect condition and verify maintenance history before operation. Personnel reserve the right not to use TOOL if inadequate. (C048)



CAUTION: This equipment is not suitable for use in locations where children are likely to be present. (C052)

Power and cabling information for NEBS (Network Equipment-Building System) GR-1089-CORE

The following comments apply to the IBM servers that have been designated as conforming to NEBS (Network Equipment-Building System) GR-1089-CORE:

The equipment is suitable for installation in the following:

- Network telecommunications facilities
- Locations where the NEC (National Electrical Code) applies

The intra-building ports of this equipment are suitable for connection to intra-building or unexposed wiring or cabling only. The intra-building ports of this equipment *must not* be metallically connected to the interfaces that connect to the OSP (outside plant) or its wiring. These interfaces are designed for use as intrabuilding interfaces only (Type 2 or Type 4 ports as described in GR-1089-CORE) and require isolation from the exposed OSP cabling. The addition of primary protectors is not sufficient protection to connect these interfaces metallically to OSP wiring.

Note: All Ethernet cables must be shielded and grounded at both ends.

The AC-powered system does not require the use of an external surge protection device (SPD).

The DC-powered system employs an isolated DC return (DC-I) design. The DC battery return terminal *shall not* be connected to the chassis or frame ground.

The DC-powered system is intended to be installed in a common bonding network (CBN) as described in GR-1089-CORE.

Installing the IBM Power S1022 (9105-22A), IBM Power S1022s (9105-22B), and IBM Power L1022 (9786-22H) servers

Use this information to learn about installing the IBM Power S1022 (9105-22A), IBM Power S1022s (9105-22B), and IBM Power L1022 (9786-22H) servers.

Installing a rack-based server

Use this information to learn about installing a rack-based server.

Prerequisite for installing the rack-mounted server

Use the information to understand the prerequisites that are required for installing the server.

About this task

You might need to read the following documents before you begin to install the server:

- The latest version of this document is maintained online. See [Installing the IBM Power S1022 \(9105-22A\), IBM Power S1022s \(9105-22B\) and IBM Power L1022 \(9786-22H\)](http://www.ibm.com/support/knowledgecenter/POWER10/p10jad/p10jad_roadmap.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10jad/p10jad_roadmap.htm).
- To plan your server installation, see [Planning for the system](http://www.ibm.com/support/knowledgecenter/POWER10/p10jad/p10jad_kickoff.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10jad/p10jad_kickoff.htm).
- To download HMC updates and fixes, see the [Hardware Management Console Support and downloads website](https://www14.software.ibm.com/webapp/set2/sas/f/hmcl/home.html) (<https://www14.software.ibm.com/webapp/set2/sas/f/hmcl/home.html>).

Consider the following prerequisites before you install the server:

Procedure

1. Ensure that you have the following items before you start your installation:
 - Phillips screwdriver
 - Flat-head screwdriver
 - Rack with four units of space
2. Ensure that you have one of the following consoles:
 - HMC at version 10 release 2.0, or later.
 - Graphic monitor with keyboard and mouse.
 - Teletype (tty) monitor with keyboard.
3. Separate the system chassis rails from the rack rails. Each rail has two parts. Before you install the rails into the rack, you must separate them. To separate the rails, extend the inner rail and press the locking tab on the inner rail. Separate the inner rail from the outer rail. Do this for each rail.

Completing inventory for your server

Use this information to complete inventory for your server.

About this task

To complete the inventory, complete the following steps:

Procedure

1. Verify that you received all the boxes you ordered.
2. Unpack the server components as needed.
3. Complete a parts inventory before you install each server component by following these steps:
 - a. Locate the inventory list for your server.
 - b. Ensure that you received all the parts that you ordered.

Note: Your order information is included with your product. You can also obtain the order information from your marketing representative or the IBM Business Partner.

Determining and marking the location in the rack

You might need to determine where to install the system unit into the rack.

About this task

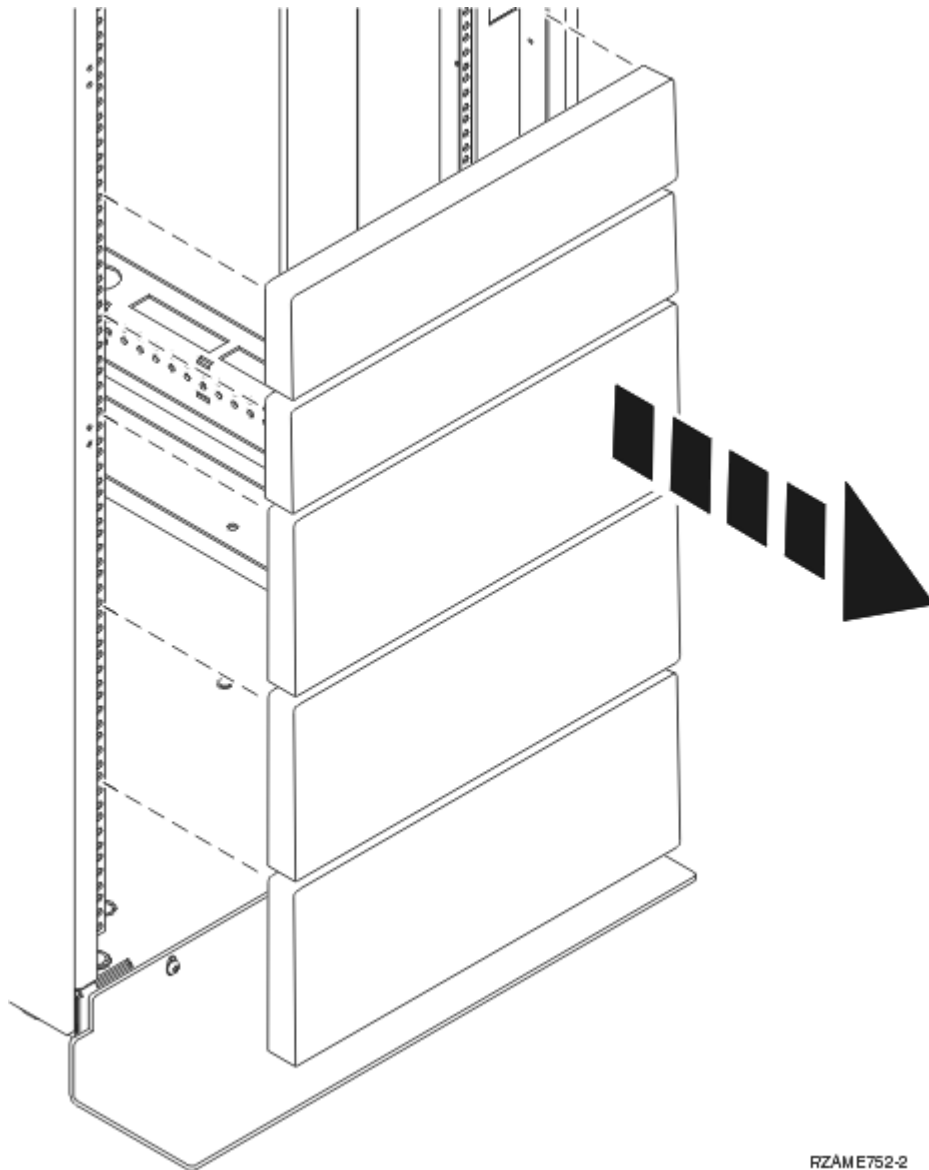
To determine where to install the system unit into a rack, complete the following steps:

Procedure

1. Read the [Rack safety notices](http://www.ibm.com/support/knowledgecenter/POWER10/p10hbf/p10hbf_racksafety.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hbf/p10hbf_racksafety.htm).
2. Determine where to place the system unit in the rack. As you plan for installing the system unit in a rack, consider the following information:
 - Organize larger and heavier units into the lower part of the rack.
 - Plan to install system units into the lower part of the rack first.
 - Record the Electronic Industries Alliance (EIA) locations in your plan.

Note: This server is two EIA units high. An EIA unit is 44.45 mm (1.75 in.) in height. The rack contains three mounting holes for each EIA unit of height.

3. If necessary, remove the filler panels to allow access to the inside of the rack enclosure where you plan to place the unit, as shown in [Figure 1 on page 3](#).



RZAME752-2

Figure 1. Removing the filler panels

4. Determine to place the system in the rack. Record the EIA location.

Note: An EIA unit on your rack consists of a grouping of three holes.

5. Facing the front of the rack and working from the right side of the rack, use tape, a marker, or pencil to mark the lowest two holes of the lowest EIA unit. Next, mark the lowest hole on the EIA unit directly above this EIA unit.
6. Repeat step [“5” on page 3](#) for the corresponding holes located on the left side of the rack.
7. Go to the rear of the rack.
8. On the right side, find the EIA unit that corresponds to the bottom EIA unit marked on the front of the rack.
9. Mark the bottom hole in the EIA unit and the top hole in the EIA unit.
10. Mark the corresponding holes on the left side of the rack.

Attach the inner rails to the system chassis

Attach the inner rails to each side of the system chassis.

About this task

Note: The system requires 2 EIA rack units (2U) of space.

Procedure

1. Each rail has two parts. Before you install the rails into the rack, you must separate them. To separate the rails, extend the inner rail and press the locking tab on the inner rail. Separate the inner rail from the outer rail. Do this for each rail.
2. Attach the inner rails to the system chassis. To attach the inner rails to the system chassis, perform the following tasks:

Note: Each inner rail is marked with either an **L** or an **R**, which designates the left inner rail and the right inner rail. The front of the system is also marked **L** or an **R** behind each handle.

- a. On the right side of the system, align the metal tabs on the system chassis with the holes on the inner chassis slide rail. Slide the chassis slide rail toward the front of the rack until the chassis slide rail clicks into place. Secure the inner chassis slide rail to the system chassis by using two screws.
- b. Repeat this step for the left chassis slide rail.

Attaching the mounting hardware to the rack

You might need to attach the mounting hardware to the rack. Use the procedure to complete this task. The information is intended to promote safety and reliable operation, and includes illustrations of the related hardware components and shows how these components relate to each other.

About this task



Attention: To avoid rail failure and potential danger to yourself and to the unit, ensure that you have the correct rails and fittings for your rack. If your rack has square support flange holes or screw-thread support flange holes, ensure that the rails and fittings match the support flange holes that are used on your rack. Do not install mismatched hardware by using washers or spacers. If you do not have the correct rails and fittings for your rack, contact your IBM reseller. If you don't have the correct rails and fittings for your rack, contact your reseller.

To install the rack-mounting hardware into the rack, complete the following steps:

Procedure

1. Standing at the front of the rack, align the pins on end of the left rail (**1**) with the rear of the rack.

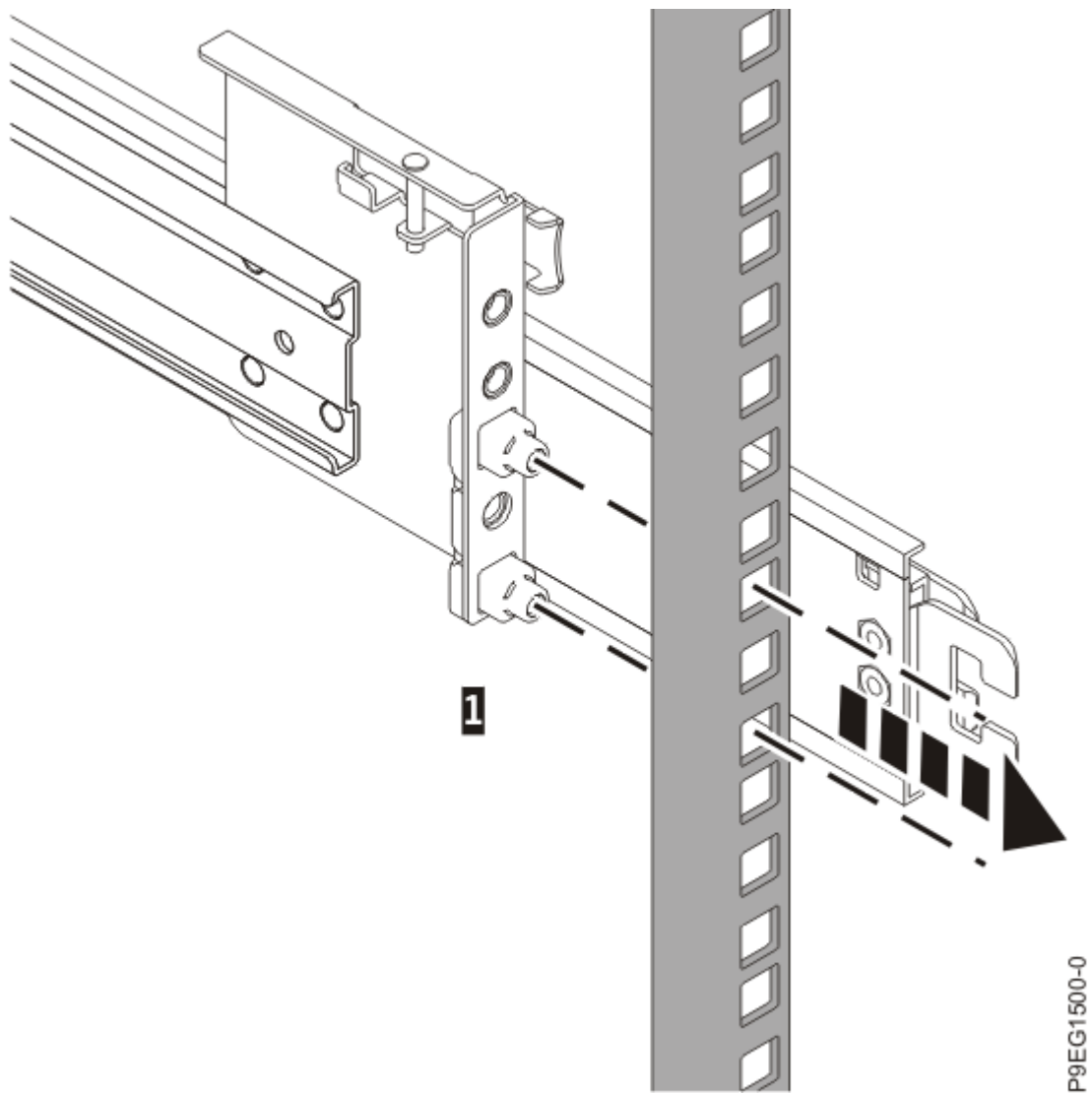
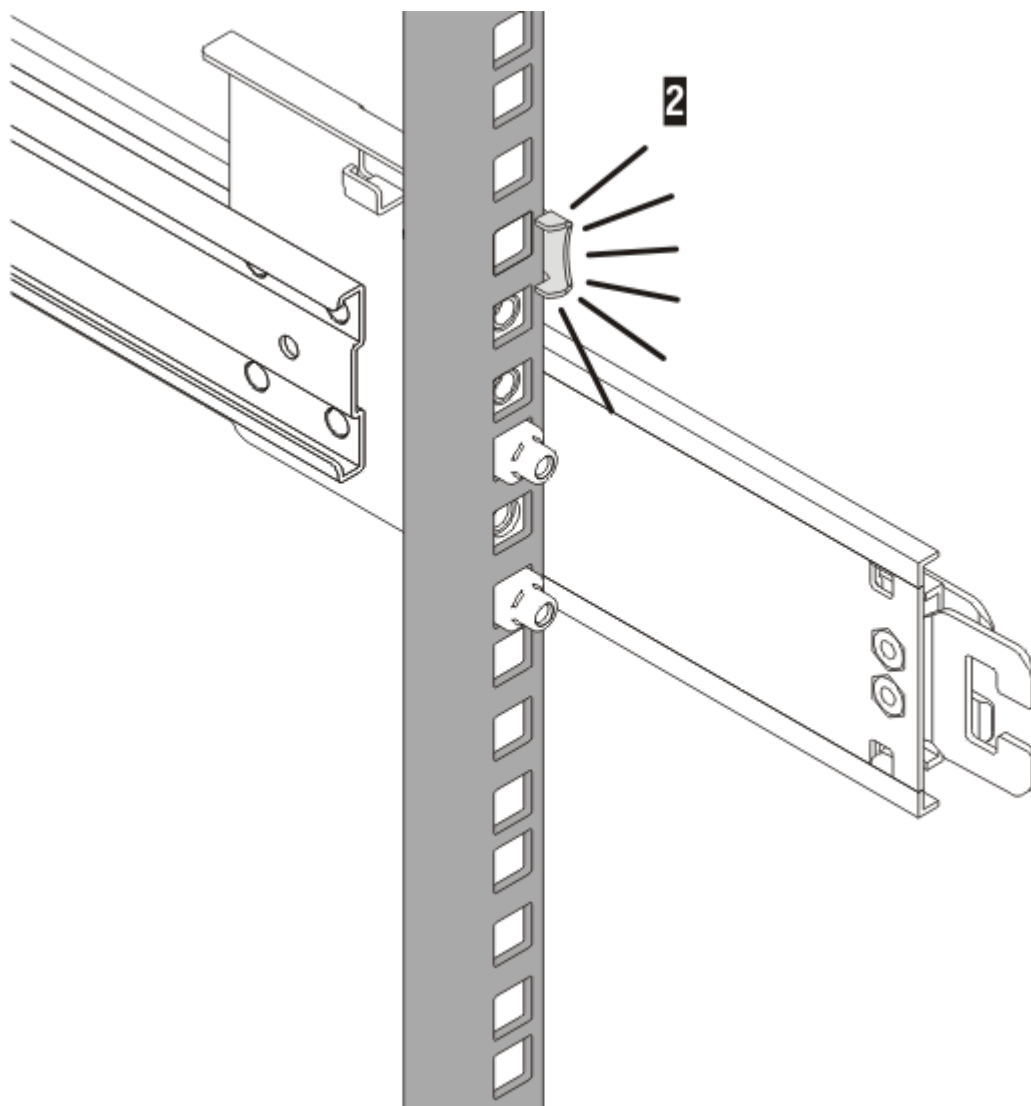


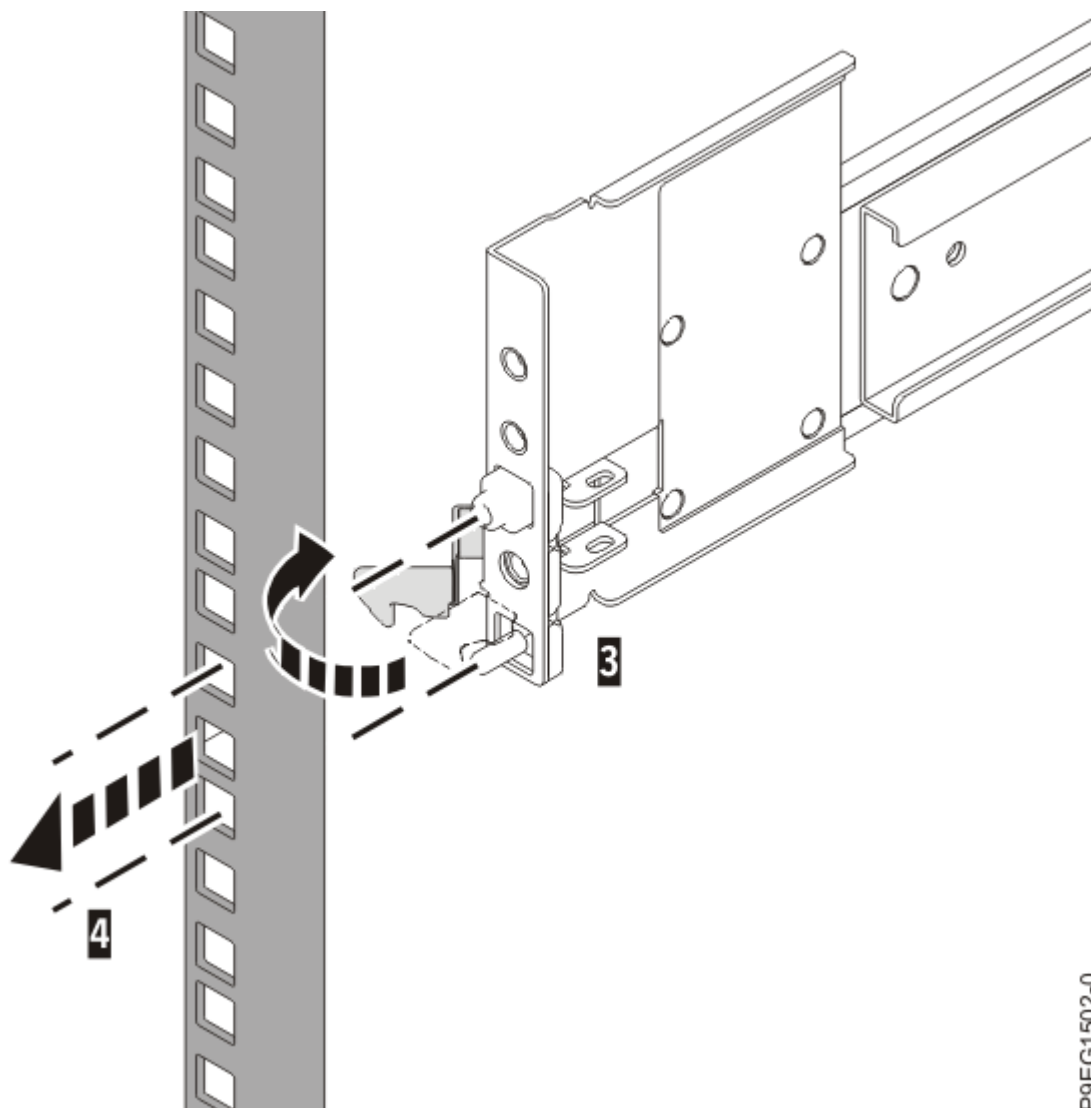
Figure 2. Aligning the end of the left rail to the rear of the rack
2. Push the rails into the rear rack flanges until they click into place (2).



P9EG1501-0

Figure 3. Pushing the rails into the rear rack flanges until they click into place

3. Standing at the front of the rack, swivel the rail retention bracket out **(3)** and pull the front of the rail toward the front of the rack, until the front rail pins are aligned with the correct rack flange holes at the front of the rack **(4)**.



P9EG1502-0

Figure 4. Swiveling the rail retention bracket and aligning the pins
4. Swivel the rail retention bracket so that it locks onto the rack flange (5).

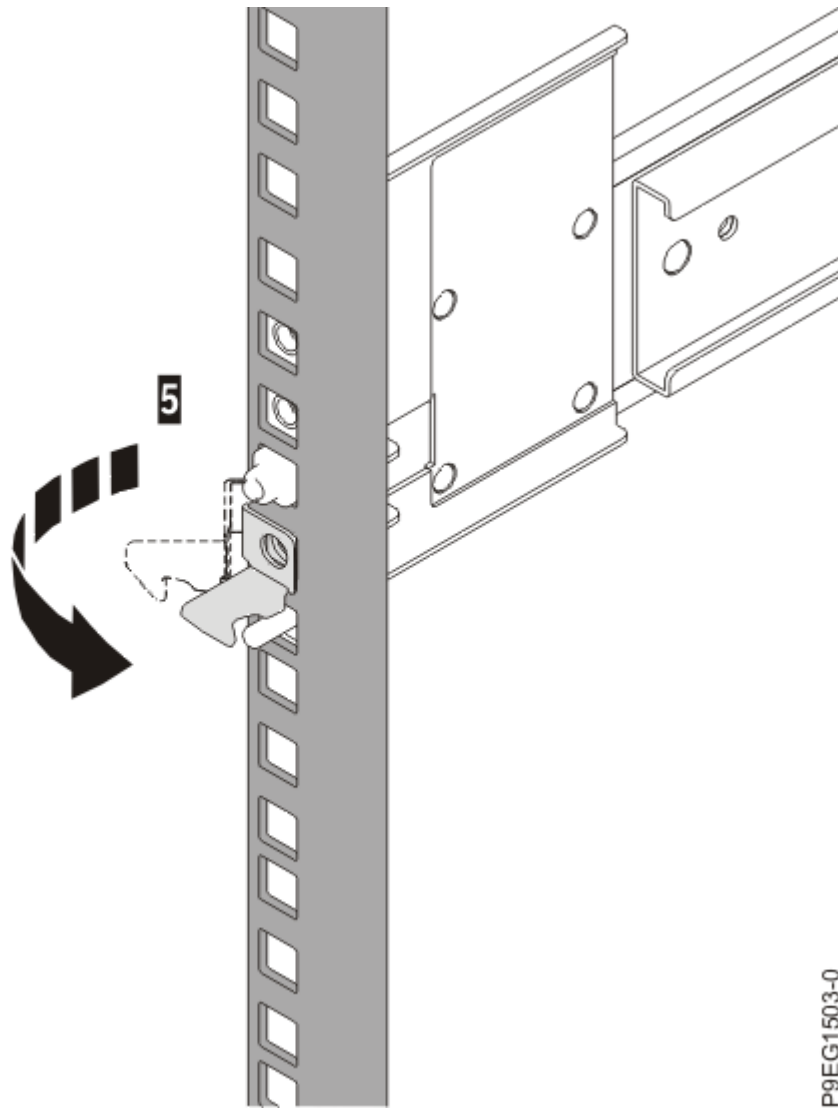


Figure 5. Locking the rail retention bracket onto the rack flange

5. Secure the rail to the rack by installing one M5x10L screw and one washer through the rack flange and into the rack rail.
6. Repeat these steps for the right rail.

Installing the system into the rack

Use the procedure to install the system into the rack.

About this task



Attention:

- Attach an electrostatic discharge (ESD) wrist strap to the front ESD jack, to the rear ESD jack, or to an unpainted metal surface of your hardware to prevent the electrostatic discharge from damaging your hardware.
- When you use an ESD wrist strap, follow all electrical safety procedures. An ESD wrist strap is used for static control. It does not increase or decrease your risk of receiving electric shock when using or working on electrical equipment.
- If you do not have an ESD wrist strap, just prior to removing the product from ESD packaging and installing or replacing hardware, touch an unpainted metal surface of the system for a minimum of 5 seconds.



CAUTION: This system requires two people to install the system into the rack.

To install the system into the rack, complete the following steps:

Procedure

1. Locate the installation switches on each side of the server rails and verify that each switch is in the **locked** position. The locked position is shown as a white lock with a dark background.

Note: The "locked" position is reversed on each side of the system.

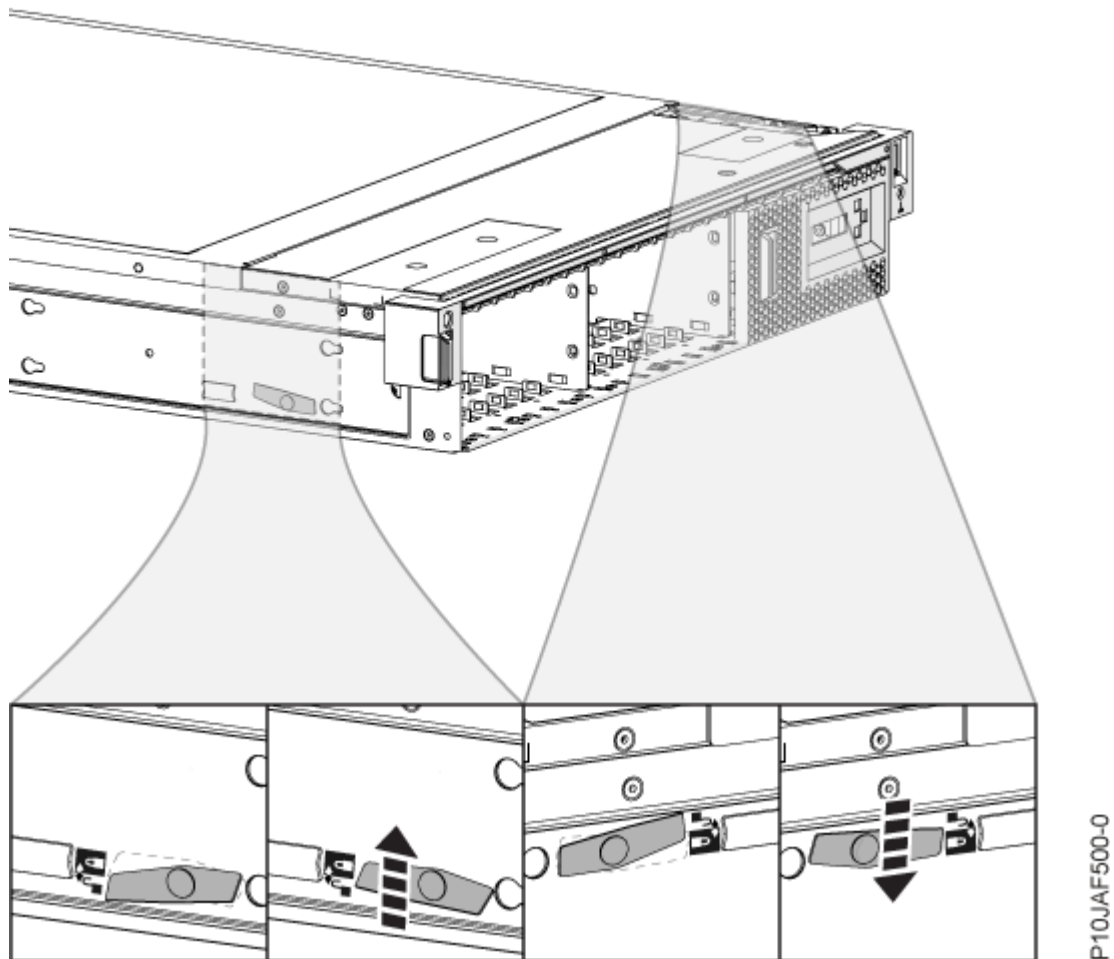
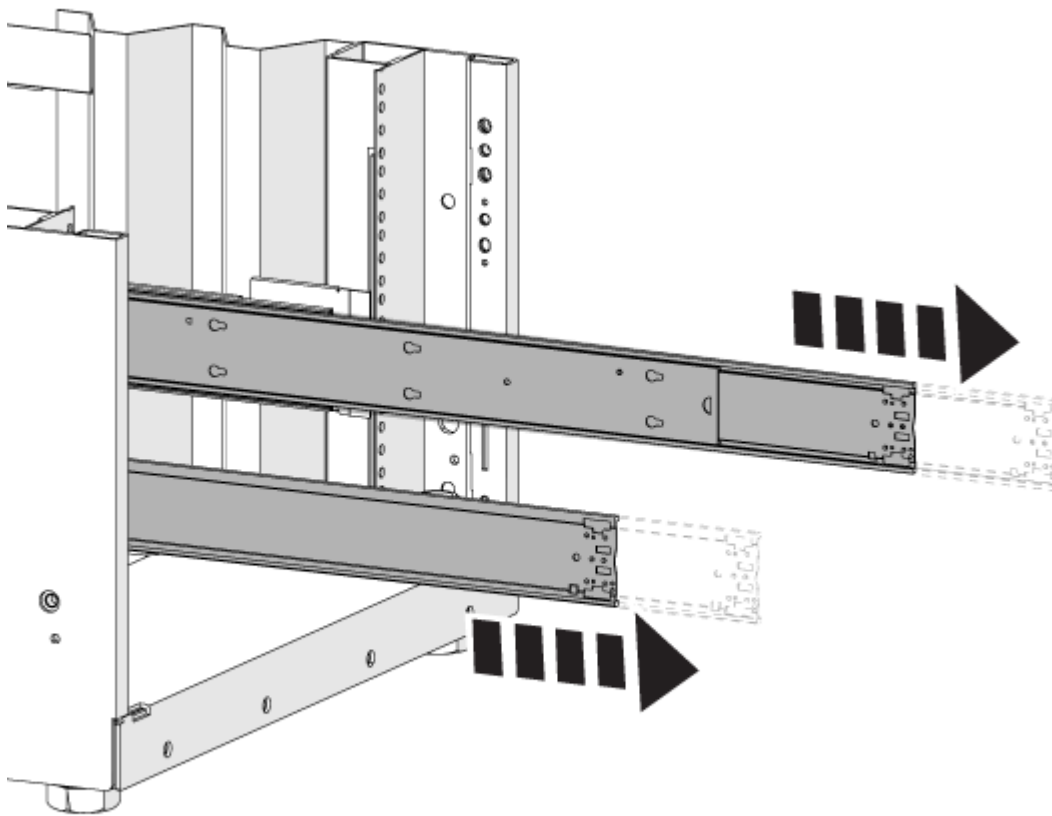


Figure 6. Verifying that the installation switches are in the locked position on each side of the server

2. Extend both slide rails forward until they click twice into place.



P10JAF501-0

Figure 7. Extending the slide rails

3. Ensure that each bearing plate on the inside of the rack rails is pulled all the way forward and is clipped to its corresponding outer rack rail.

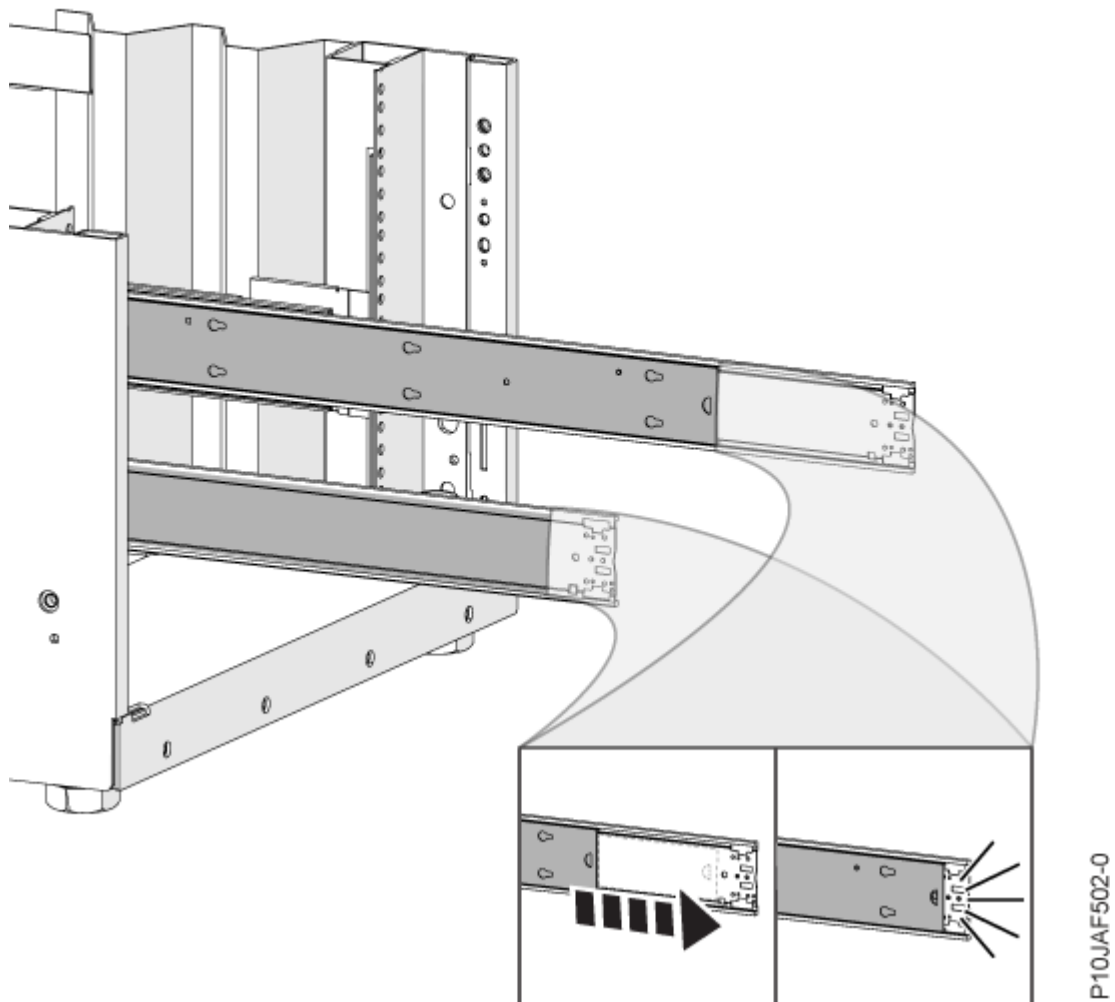
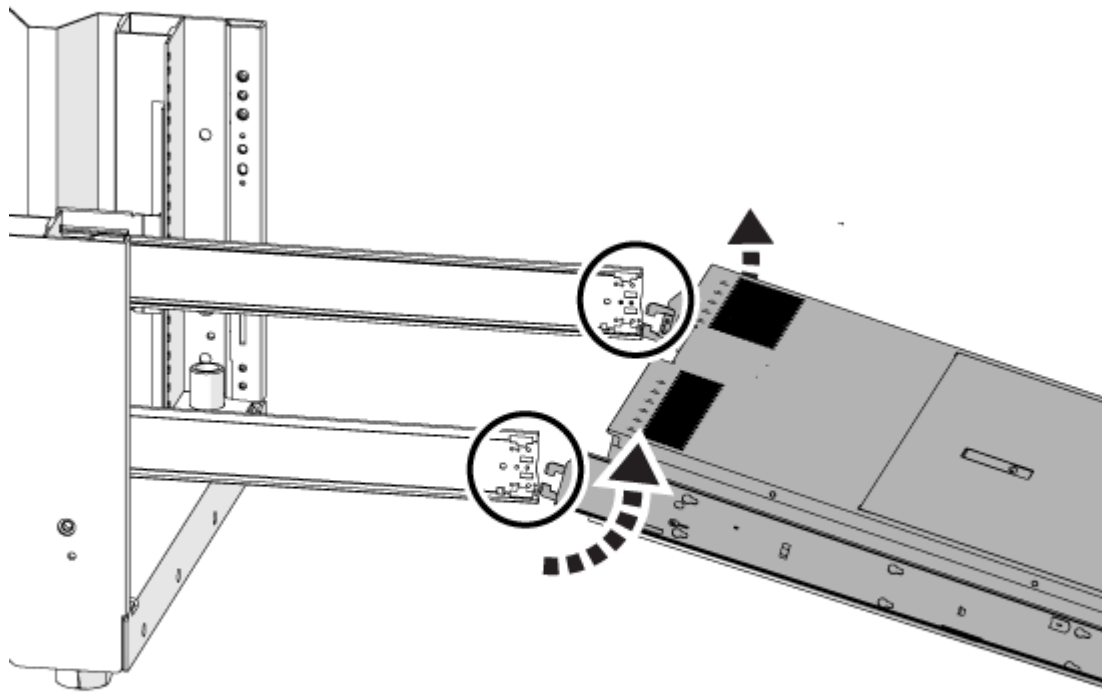


Figure 8. Ensuring that the bearing plates are clipped to the outer rack rails

4. With one person on each side, carefully lift the server and align each end of the lower portion of the server rails with the corresponding lower portion of the extended rack slide rails.
5. Tilt the server up so that the upper part of the server rails align with the upper part of the rack rails.



P10JAF503-0

Figure 9. Tilting the server and aligning the server rails with the rack rails

6. Push the server closer to the rack until the rear of the server meets the front of the rack.
7. Ensure that the installation switches on each side of the server rails are in the **locked** position.

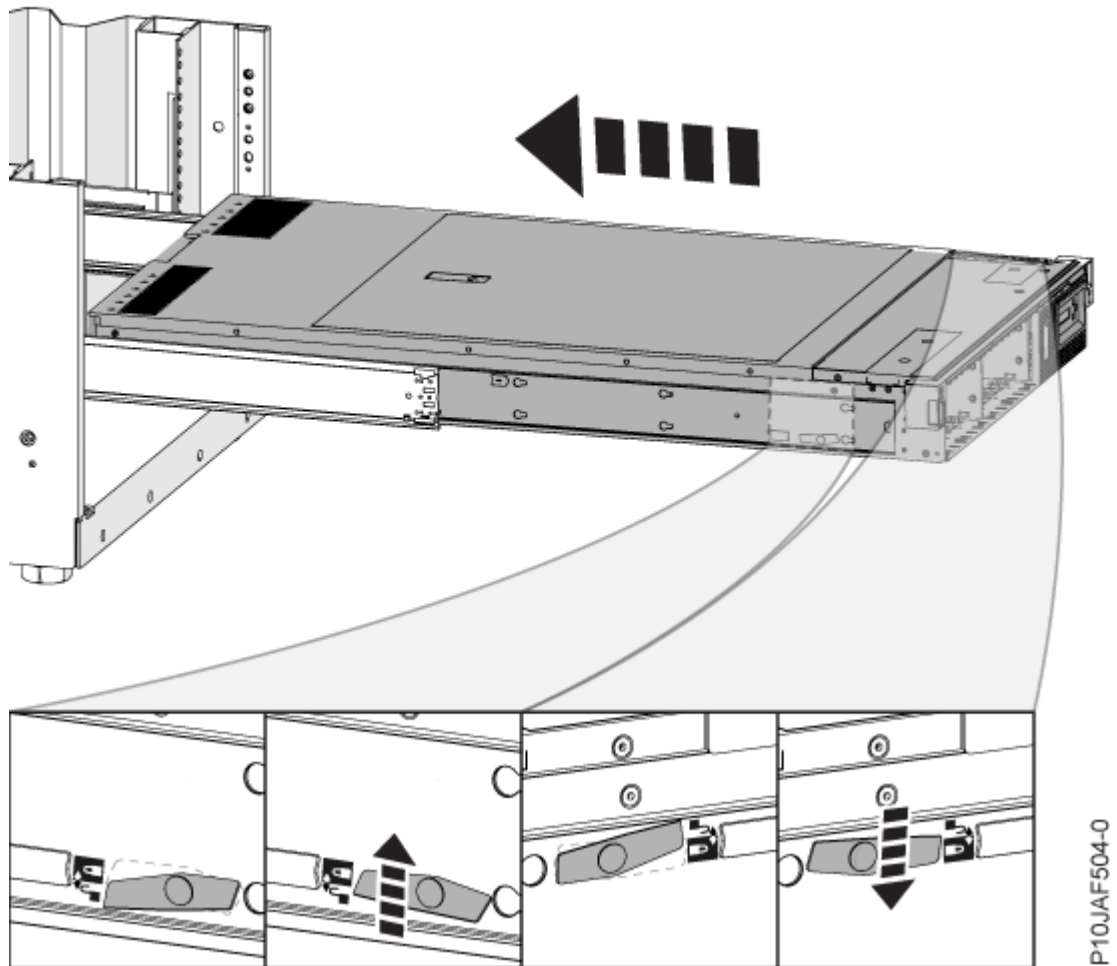


Figure 10. Ensuring that the installation switches on each side of the server rails are in the locked position before sliding the blue horizontal server switches and pushing the server into the rack

8. Slide the blue horizontal server switch on both rails and push the server all the way into the rack until it clicks into place.

Installing the cable-management arm

The cable-management arm is used to efficiently route cables so that you have proper access to the rear of the system. Use the procedure to install the cable-management arm.

About this task

To install the cable-management arm, complete the following steps:

Procedure

1. Ensure that you have the following parts.

Item Description

- A** Inner cable management arm tab
- B** Inner mounting bracket

Item Description

- C** Outer cable management arm tab
- D** Outer mounting bracket
- E** Extension tab
- F** Outer cable management arm tab

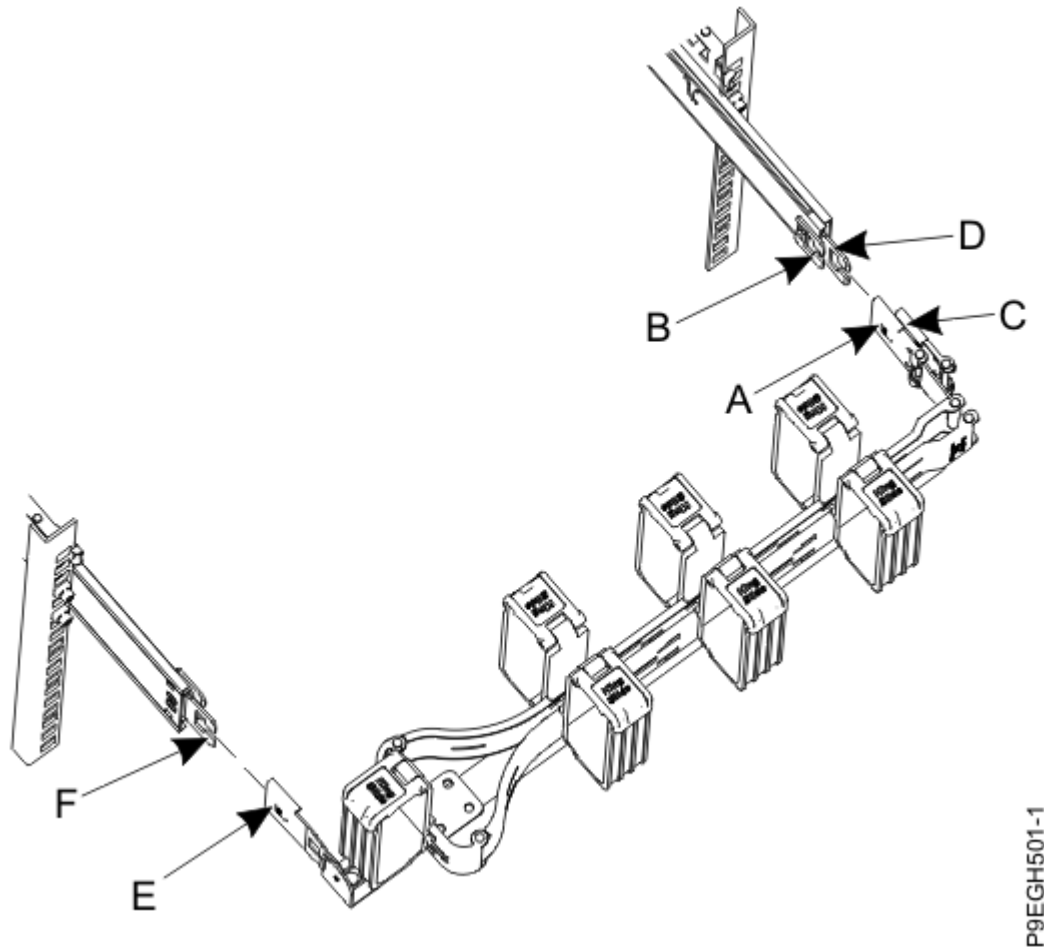


Figure 11. Relative positions of the parts of the cable-management arm before assembly

2. The cable-management arm can be installed on either side of the server. For this procedure, it is illustrated that you are installing it on the right side, while you are facing the server from the rear. If you want to install the cable management arm on the other side of the rack, you can press the button on the extension tab **(1)** so that it swivels in the opposite direction **(2)**.

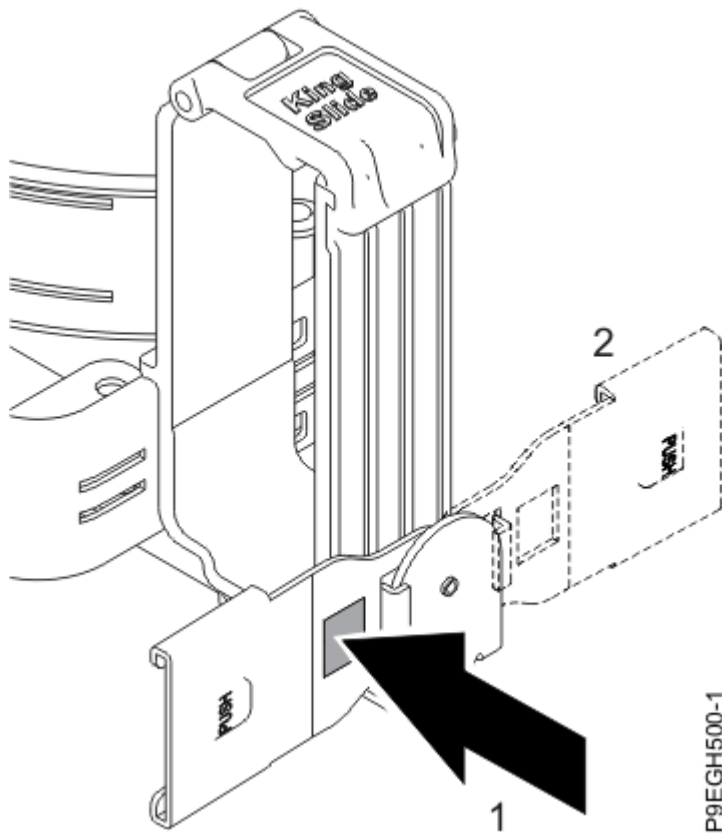


Figure 12. Swiveling the cable management arm extension tab

3. Insert the inner cable management arm tab (A) to the inner mounting bracket (B) until the outer mounting bracket (D) clicks into place.

Note: To avoid damage when the system is placed in the service position, ensure that the middle pin is between each arm.

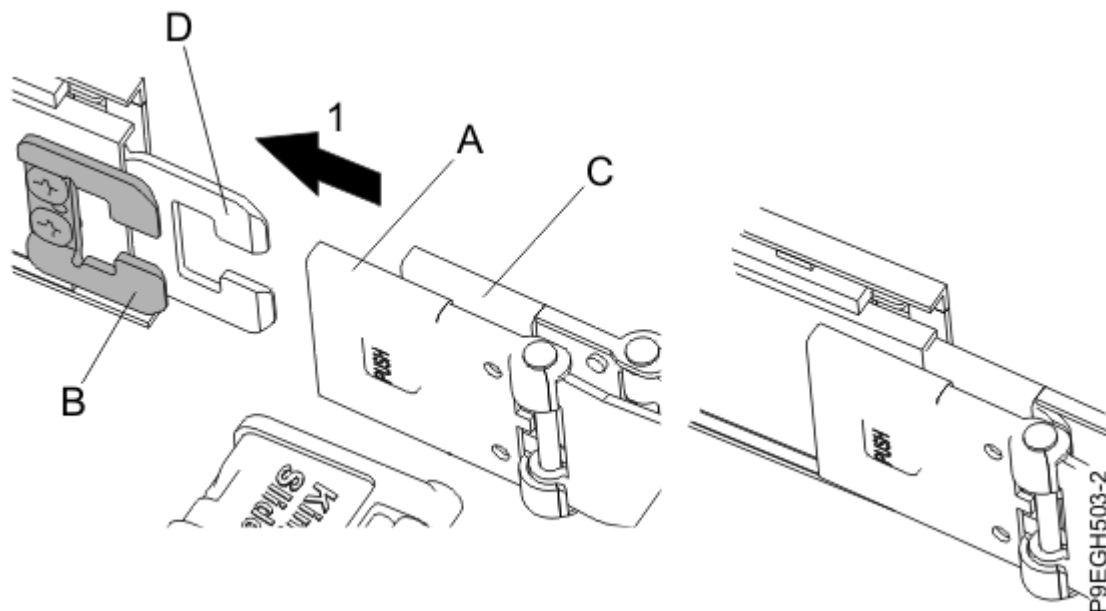


Figure 13. Inserting the mounting brackets

4. On the opposite side of the rack, insert the extension tab (E) to the outer cable management arm tab (F) until it clicks into place.

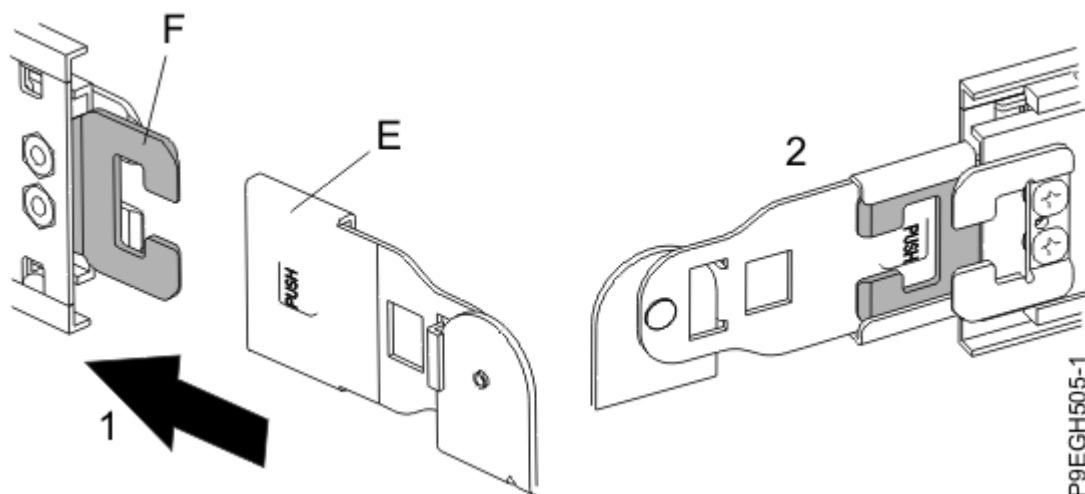


Figure 14. Attaching the extension tab to the cable management arm to the outer cable management arm tab

5. To route the cables through the cable management arm, press the latches on the cable management arm to open the baskets, route the cables through the arm, and then re-latch the baskets until they are fully seated.

Cabling the server and setting up a console

Your console, monitor, or interface choices are guided by whether you create logical partitions, which operating system you install in your primary partition, and whether you install a Virtual I/O Server (VIOS) in one of your logical partitions.

Accessing the eBMC so that you can manage the system

IBM® Power Systems servers use an enterprise baseboard management controller (eBMC) for system service management, monitoring, maintenance, and control. The eBMC also provides access to the system event log files (SEL). The eBMC is a specialized service processor that monitors the physical state of the system by using sensors. A system administrator or service representative can communicate with the eBMC through an independent connection.

About this task

Important: Intelligent Platform Management Interface (IPMI) is disabled by default on your system. Inherent security vulnerabilities are associated with using the IPMI. Consider using Redfish APIs or the GUI to manage your system. You must enable the IPMI and authorize the user before you can use the service.

Note: To manage your system using the eBMC using your HMC, your HMC must be at Version 10 Release 1 Service Pack 1020, or later.

To access the eBMC by using your HMC, complete the following steps:

Procedure

1. Identify the port on the HMC that is enabled as a DHCP server and connect the new system to the managed system network.
2. The HMC discovers the system and assigns it a default name. The name is the DHCP IP address you are using, without the decimals. The BMC displays the **Pending Authentication** state.
3. You are prompted to set the ID and password that your HMC will use to authenticate and manage the system (the default password is expired). This is the same ID and password that you will use to access the ASMI. To set the system password, select the BMC, then select **Actions > Update System Password**.

4. Click **Finish**.
5. Select **System Actions > VMI configuration**. Select the network interface, then select **Modify**.
Note: You can choose either T0 or T1. If you previously connected to T0, configure Eth0. If you previously connected to T1 on the HMC network, configure Eth1.
6. Select **DHCP** and click **OK**.
7. Use the HMC to power on the system.
 - a. In the navigation area, select **Resources > All Systems**.
 - b. In the content pane, select the managed system.
 - c. In the navigation area, select **System Actions > Operations > Power On**.

Cabling the server with an ASCII terminal

If you are not creating logical partitions, you can use an ASCII terminal to manage a server that is running the AIX®, Linux®, or VIOS operating systems. From the ASCII terminal, you can access the Advanced System Management Interface (ASMI) to complete more installation tasks.

About this task

The ASCII terminal is connected to the server through a serial link. The ASCII interface to the ASMI provides a subset of the web interface functions. The ASCII terminal for the ASMI interface is available only when the system is in the standby state. It is not available during the initial program load (IPL) or run time.

Note: If you are using a serial connection to the ASMI terminal, you must use a conversion cable. This cable (part number 46K5108) is used to convert the ASCII terminal 9-pin Dshell connector to an RJ45 serial port connector on the system. For information about the locations of the connectors on the system, see [Part locations and location codes](http://www.ibm.com/support/knowledgecenter/POWER10/p10ecs/p10ecs_locations.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10ecs/p10ecs_locations.htm).

To cable an ASCII terminal to the server, complete the following steps:

Procedure

1. Using a serial cable that is equipped with a null modem, connect the ASCII terminal to the serial port on the rear of the server.
2. Complete the following steps:
 - a. Plug the power cord into the power supply.
Note: If present, remove and discard any plug that covers the ports on the rear of the system. The port covers ensure that you are reminded about resetting the Administrator password of your managed system after the initial program load (IPL) completes.
 - b. Plug the system power cords and the power cords for any other attached devices into the power source.
3. Wait for the green light on the control panel to start flashing.
4. Ensure that your ASCII terminal is set to the following general attributes.

These attributes are the default settings for the diagnostic programs. Be sure that your terminal is set according to these attributes before proceeding to the next step.

<i>Table 1. Default settings for the diagnostic programs</i>				
General setup attributes	3151 /11/ 31/41 settings	3151 /51/ 61 settings	3161 /64 settings	Description
Line speed	19,200	19,200	19,200	Uses the 19,200 (bits per second) line speed to communicate with the system unit.
Word length (bits)	8	8	8	Selects 8 bits as a data word length (byte).
Parity	No	No	No	Does not add a parity bit and is used together with the word length attribute to form the 8-bit data word (byte).
Stop bit	1	1	1	Places a bit after a data word (byte).

5. Press a key on the ASCII terminal to allow the service processor to confirm the presence of the ASCII terminal.
6. When the login display appears for the ASMI, enter admin for the user ID and password.
7. Change the default password when you are prompted.
8. Press Enter until the server information appears.
You have completed the setup for an ASCII terminal, and have started the ASMI.
9. Continue with [“Completing the server setup”](#) on page 23.

Cabling the server to the HMC

The Hardware Management Console (HMC) controls managed systems, including the management of logical partitions, the creation of a virtual environment, and the use of capacity on demand. Using service applications, the HMC can also communicate with managed systems to detect, consolidate, and forward information to IBM service for analysis.

Before you begin

If you have not installed and configured your HMC, do so now. For instructions, see [Installation and configuration tasks](http://www.ibm.com/support/knowledgecenter/POWER10/p10hai/p10hai_taskflow.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hai/p10hai_taskflow.htm).

To manage POWER10 processor-based systems, the HMC must be at version 10 release 2.0, or later. To view the HMC version and release, complete the following steps:

1. In the navigation area, click **Updates**.
2. In the work area, view and record the information that appears in the HMC Code Level section, including the HMC version, release, Service Pack, build level, and base versions.

To cable the server to the HMC, complete the following steps:

Procedure

1. If you want to directly attach your HMC to the managed system, connect **ETH0** on the HMC to the **HMC0** port on the managed system.
2. To learn how to connect an HMC to a private network so that it can manage more than one managed system, see [HMC network connections](http://www.ibm.com/support/knowledgecenter/POWER10/p10hai/p10hai_netconhmc.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hai/p10hai_netconhmc.htm).

Notes:

- You can also have multiple systems that are attached to a switch that is then connected to the HMC. For instructions, see [HMC network connections](http://www.ibm.com/support/knowledgecenter/POWER10/p10hai/p10hai_netconhmc.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hai/p10hai_netconhmc.htm).
 - If you are using a switch, ensure that the speed in the switch is set to **Autodetection**. If the server is directly attached to the HMC, ensure the Ethernet adapter speed on the HMC is set to **Autodetection**. For information about how to set media speeds, see [Setting the media speed](http://www.ibm.com/support/knowledgecenter/POWER10/p10hai/p10hai_lanmediaspeed_enh.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hai/p10hai_lanmediaspeed_enh.htm).
3. If you are connecting a second HMC to your managed server, connect it to the Ethernet port that is labeled **HMC2** on the managed server.
 4. Continue with [“Cabling the server and connecting expansion units”](#) on page 22.

Cabling the server and accessing Operations Console

You can use Operations Console to manage a server that is running the IBM i operating system even if you do not have logical partitions.

Before you begin

You can access the Operations Console via a LAN connection to IBM i by using [IBM i Access Client Solutions](#) (<http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805>).

Note:

For more information about supported operating systems with IBM i Access, see [IBM i Access Client Solutions](#) (<http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805>).

To cable the server and to access the Operations Console, complete the following steps:

1. Ensure that your server is powered off.
2. Obtain a static IP address that is assigned to the LAN console adapter on the server so that the console can use it. Note the Internet Protocol (IP) address, subnet mask, and default gateway. Optionally, select a unique host name and register the host name and the IP address in your site's Domain Name System (DNS).

Note: This IP address is used by the Operations Console stack on the IBM i interface and is different from the IP address that is used to connect a normal Telnet session. The IP address must not be in use by another server. Ping the IP address on a PC connected to a network to verify that no other device is using the IP address. You should not receive replies.

To set up the Operations Console, complete the following steps:

1. Install IBM i Access Client Solutions (ACS) (<http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805>) on a network-connected personal computer.

Note: To run IBM i Access Client Solutions (ACS) on a workstation, you must install Java. ACS is a Java-based program and Java is required to run ACS. For information about ACS Java requirements, see [IBM i Access - ACS Getting Started](#) (<https://www.ibm.com/support/pages/ibm-i-access-accs-getting-started#3.0>).

Note: It is recommended that you log onto the PC as the local administrator. This ensures that you have all the privileges that you need to modify the PC and to start a console session. Also, ensure that you are running the latest version of ACS. For more information, see [IBM i Access - Client Solutions 5733XJ1](#) (<https://www.ibm.com/support/pages/ibm-i-access-client-solutions-5733xj1>).

2. Cable the PC to a server. Plug a Cat 5e or Cat 6 (recommended) Ethernet cable to the PC and into a valid Ethernet adapter port. To determine the server adapter port that you must use, refer to the following table:

Note: The T1 resource is required for console connectivity on any adapter. The T1 resource is either the top or far-right port depending on how you are viewing the system.

Table 2. Server Operations Console LAN slots	
Server	Operations Console - LAN slot
9105-41B	C7, C8, C9, C10, C11
9105-22A, 9105-22B, 9105-42A, 9786-22H, or 9786-42H	C0, C1, C2, C3, C4, C7, C8, C9, C10, C11

Note: Make the initial connection with the PC that is directly cabled to the server. The PC and server can be re-cabled to the network after the initial connection is made and a static IP address has been assigned to the Operations Console port. A cross-over cable is not needed. For more information, see [Adapter requirements](http://www.ibm.com/support/knowledgecenter/POWER10/p10hbx/hardwarereq_adapter.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hbx/hardwarereq_adapter.htm)

3. Configure the PC network. To configure the PC network, complete the following steps:
 - a. Open Windows Control Panel and access the adapter settings. If you are using Windows 10, select **Control Panel > Network and Internet > Network and Sharing Center > Change Adapter Settings**.
 - b. Disable any additional adapters other than the Local Area Connection.
 - c. Right click the adapter and select **Properties**.
 - d. Click **Internet Protocol Version 4 (TCP/IPv4)** and select **Properties**.

Note: If you are returning the device to the network after you set up the Operations Console, record the IP information that is displayed.

- e. Select **Obtain an IP address automatically**. This ensures that the PC receives an IP address in the 169.254.x.x range.
4. To disable the PC firewall, complete the following steps.

Note: All PC firewalls must be disabled for the initial connection.

- a. In the Windows control panel, click **Firewall settings** and disable the firewall.
 - b. In the Windows control panel, click **Security center**. Check for a firewall and, if present, disable it.
 - c. Scan all tasks that are running on the PC for any other software firewalls and disable the firewall.
5. Power on the server by completing the following steps:

- a. Set the manual initial program load (IPL) by completing the following steps:
 - i) Locate the server's control panel.
 - ii) Press the Up arrow key until you see **02**, and press Enter.
 - iii) Press Enter again. A < (less than symbol) appears next to **N**.
 - iv) Press the Up Arrow key. The **N** changes to an **M**.
 - v) Press Enter.
 - vi) Press Enter twice. A **02** is displayed on the control panel.
 - b. After you have the server set to a manual IPL, push the white power button to power on the server.

Note: During the IPL, the system displays C6004031 on the control panel, which indicates that the system is searching for an Operations Console. The system might take 20 - 30 minutes to complete this action. If A6005008 is displayed on the control panel, this means that no Operations Console is available. This might indicate that the system is not preinstalled with IBM i and you must set the console type to LAN.

6. Perform this step if the system is not preinstalled with IBM i. For setting the console type to LAN, complete the following steps:
 - a. Enable the control panel functions by completing the following steps:
 - i) Select function 25 on the control panel and press Enter. The return code must be 00.

ii) Select function 26 on the control panel and press Enter.

Note: If you see a FF return code, go back to function 25 and press Enter, then return to function 26 and press Enter.

b. Check your current setting(s). Use console service functions (65+21+11) to check the current setting.

- A600 500A = No console defined
- A603 500A = LAN console
- A604 500A = HMC console

If the system reference code (SRC) = A603500A, skip to step [“7” on page 21](#). For all others SRCs, continue with the next step.

c. Set console type to LAN.

For release 7.4 and earlier, complete the following steps.

- i) Use the 65+21+11 sequences until it returns A603500B. This indicates that the console type will be changed to LAN.
- ii) Use the 21. This performs the change console type function.
- iii) Use the 11, until it returns A6C3500C. This indicates that settings have been saved successfully. If not, repeat function 11 until it returns A6C3500C

d. For release 7.5 and later, complete the following steps.

- i) Use the 65+11 sequences until it returns A603500B. This indicates that the console type will be changed to LAN.
- ii) Use the 21. This performs the change console type function.
- iii) Use the 11, until it returns A6C3500C. This indicates that settings have been saved successfully. If not, repeat function 11 until it returns A6C3500C

Note: 65+21+11 functions are no longer needed unless directed by IBM support. The functions to set an adapter location are now performed automatically by the Licensed Internal Code.

7. Connect the Operations Console by completing the following steps:

- a. Open IBM i Access Client Solutions (ACS).
- b. Under Management, click **System Configurations**.
- c. Select **Locate Console**.
- d. Click **Search**. After a few seconds, a connection displays. Click the connection and then click **Console**.
- e. In the Pending Authorization window, type the User ID and Password.
- f. Accept the security certificate. Ensure that you accept it, otherwise your connection will not continue. A console window opens. If the window is blank at first but the cursor is in the upper left corner, it means that the screen is waiting for the Drive or DVD to provide the information to be displayed.

8. To set a static IP address for the Operations Console, complete the following steps:

- a. Sign on with QSECOFR. The default password is QSECOFR, and it is case-sensitive.
- b. At the DST Main Menu **b**, select Option 3- **Use Dedicated Service Tools**.
- c. Select **Option 5- Work with DST environment**.
- d. Select **Option 2- System Devices**.
- e. Select **Option 7- Configure service tools LAN adapter**.
- f. Type the IP settings that you want to use. *Optional:* For the host name for Service Tools, you can type a host name if it is also registered in your network DNS. It is recommended that you type the word Default and enter the IP address that you want to use.
- g. Press F7 to store the information.

- h. Press F17 to **Deactivate** the session and then press it again to **Activate**. This causes your session to go blank. Close the session.
9. To create a connection to the static IP, complete the following steps:
 - a. Either move the PC and Operations Console port both to the network or re-configure the PC IP settings to be in the same subnet that you just configured for the service tools LAN adapter.
 - b. Return to the ACS interface and select the window labeled System Configurations.
 - c. Click **New**.
 - d. If you will use this connection to connect to other functions, type the system name that you plan to use in the General tab.
 - e. Click the **Console** tab.
 - f. Under the LAN Console/Virtual Control panel, type the IP address of the service tools LAN adapter in the Service Host Name field.
 - g. Click **OK**.
 - h. In the main ACS menu, click **System** and select the system that you created.
 - i. Under Console, click **5250 Console**. Continue with your IPL.

Note: The IP configuration of the PC must be reset before cabling the PC back to the network because the PC is configured with the gateway IP address. The PC and server console port (T1) can now be re-cabled to the network.

Continue with [“Completing the server setup”](#) on page 23.

Cabling the server with keyboard, video, and mouse

Before you start the system, you might need to connect the keyboard, video, and mouse to the system, if a graphics card is present.

About this task

To connect the keyboard, video, and mouse, complete the following steps:

Procedure

1. Locate the graphics card and Universal Serial Bus (USB) ports at the rear of the system. You might need a connector converter.
2. Connect the monitor cable to the graphics card.
3. Connect a keyboard and mouse to the blue USB 3.0 ports.
4. Power on the console.
5. Continue with [“Cabling the server and connecting expansion units”](#) on page 22.

Cabling the server and connecting expansion units

Learn how to cable the server and to connect expansion units.

About this task

To cable the server and to connect expansion units, complete the following steps:

Procedure

1. Complete the following steps:
 - a. Plug the power cord into the power supply.

Note: If present, remove and discard any plug that covers the ports on the rear of the system. The port covers ensure that you are reminded about resetting the Administrator password of your managed system after the initial program load (IPL) completes.

- b. Plug the system power cords and the power cords for any other attached devices into the power source.
 - c. If your system uses a power distribution unit (PDU), complete the following steps:
 - i) Connect the system power cords from the server and I/O drawers to the PDU with an IEC 320 type receptacle.
 - ii) Attach the PDU input power cord and plug it into the power source.
 - iii) If your system uses two PDUs for redundancy, complete the following steps:
 - If your system has two power supplies, attach one power supply to each of the two PDUs.
 - If your system has four power supplies, plug E0 and E1 to **PDU A** and E2 and E3 to **PDU B**.
- Note:** Confirm that the system is in standby mode. The green power status indicator on the front control panel is flashing, and the dc out indicator lights on the power supplies are flashing. If none of the indicators are flashing, check the power cord connections.
2. For information about connecting enclosures and expansion units, see [Enclosures and expansion units](http://www.ibm.com/support/knowledgecenter/POWER10/p10ham/p10ham_kickoff.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10ham/p10ham_kickoff.htm).

Completing the server setup

Learn about the tasks you must complete to set up your managed system.

Select from the following options:

- [“Completing the server setup by using an HMC” on page 23](#)
- [“Completing the server setup without using an HMC” on page 24](#)

Completing the server setup by using an HMC

Perform these tasks to complete the server setup by using a Hardware Management Console (HMC). You can also begin to use virtualization to consolidate multiple workloads onto fewer systems to increase server use, and to reduce cost.

Before you begin

To manage POWER10 processor-based systems, the HMC must be at version 10 release 2.0, or later.

About this task

To complete the server setup by using an HMC, complete the following steps:

Procedure

1. Change the managed system passwords by completing the following steps:

For more information about setting passwords for the managed system by using the HMC, see [Setting passwords for the managed system](http://www.ibm.com/support/knowledgecenter/POWER10/p10hai/p10hai_setpassword_enh.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hai/p10hai_setpassword_enh.htm).
2. Update the time of day on the managed system by using the Advanced System Management Interface (ASMI).

To connect to the Advanced System Management Interface, complete the following steps:

 - a. In the navigation area, click **System resources**, and then select **Systems**.
 - b. In the content area, select one or more managed systems, and then click **Connections and operations > Launch advanced system management (ASMI)**.
3. Check the firmware level on the managed system and update it as needed.

To view and update the system firmware, complete the following steps:

 - a. In the navigation area, click **System resources**, and then select **Systems**.

- b. To view the firmware information of the system, select the server for which you want to view the firmware information and click **Firmware > View current system firmware levels**.
 - c. Compare your installed firmware level with available firmware levels. For more information, see the [Fix Central website](http://www.ibm.com/support/fixcentral) (<http://www.ibm.com/support/fixcentral>).
 - d. If necessary, update your managed system firmware levels. Click **Firmware > Update system firmware**.
 - e. After you complete this task, click **Close**.
4. To power on a managed system, see [Starting a system](http://www.ibm.com/support/knowledgecenter/POWER10/p10haj/crustartsys.htm) (<http://www.ibm.com/support/knowledgecenter/POWER10/p10haj/crustartsys.htm>)
5. Create partitions using templates.
 - If you are creating new partitions, you can use the templates that are on your HMC. For more information, see [Accessing the template library](http://www.ibm.com/support/knowledgecenter/POWER10/p10efc/p10efc_accessing_template_library.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10efc/p10efc_accessing_template_library.htm).
 - If you have existing partitions on another system, you can capture those configurations, save it to the template library and deploy the partition template. For more information, see [Partition templates](http://www.ibm.com/support/knowledgecenter/POWER10/p10efc/p10efc_partition_template_concept.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10efc/p10efc_partition_template_concept.htm).
 - If you want to use an existing template from another source, you can import that and use it. For more information, see [Importing a partition template](http://www.ibm.com/support/knowledgecenter/POWER10/p10efc/p10efc_import_partition_template.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10efc/p10efc_import_partition_template.htm).
6. Install an operating system and update the operating system.
 - Install the AIX operating system. For instructions, see [Installing AIX](http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installaix.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installaix.htm).
 - Install the Linux operating system. For instructions, see [Installing Linux](http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installlinux.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installlinux.htm).
 - Install the VIOS operating system. For instructions, see [Installing VIOS](https://www.ibm.com/support/knowledgecenter/POWER10/p10hb1/p10hb1_vios_install.htm) (https://www.ibm.com/support/knowledgecenter/POWER10/p10hb1/p10hb1_vios_install.htm).
 - Install the IBM i operating system. For instructions, see [Installing the IBM i operating system](http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_ibmi.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_ibmi.htm).
7. You have now completed the steps to install your server.

Completing the server setup without using an HMC

If you do not have an Hardware Management Console (HMC), use this procedure to complete the server setup.

About this task

To complete the server setup without using a management console, complete the following steps:

Procedure

1. Attach the server to the rack using the shipping screws that were provided with your system.
2. To check the firmware level on the managed system and the time of day, complete the following steps:
 - a. Access the Advanced System Management Interface (ASMI). For instructions, see [Accessing the ASMI without an HMC](http://www.ibm.com/support/knowledgecenter/POWER10/p10hby/connect_asmi.htm) (www.ibm.com/support/knowledgecenter/POWER10/p10hby/connect_asmi.htm).
 - b. On the ASMI Welcome pane, note the existing level of server firmware in the upper-right corner under the copyright statement.
 - c. Update the date and time.

To automatically set the date and time, select **NTP**. Enter the NTP server address or addresses. Click **Save settings**.

- To manually set the date and time, Select **Manual**. Enter the date and time. Click **Save settings**.
3. To start a system, complete the following steps:
 - a. Open the front door of the managed system.
 - b. Press the power button on the control panel.The power-on light begins to flash faster.
 - a. The system cooling fans are activated after approximately 30 seconds and begin to accelerate to operating speed.
 - b. Progress indicators appear on the control panel display while the system is being started.
 - c. The power-on light on the control panel stops flashing and remains on, indicating that the system is powered on.For instructions, see [Starting a system that is not managed by an HMC \(www.ibm.com/support/knowledgecenter/POWER10/p10haj/startsysnohmc.htm\)](http://www.ibm.com/support/knowledgecenter/POWER10/p10haj/startsysnohmc.htm).
 4. Install an operating system and update the operating system.
 - Install the AIX operating system. For instructions, see [Installing AIX \(http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installaix.htm\)](http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installaix.htm).
 - Install the Linux operating system. For instructions, see [Installing Linux \(http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installlinux.htm\)](http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installlinux.htm).
 - Install the VIOS operating system. For instructions, see [Installing VIOS \(https://www.ibm.com/support/knowledgecenter/POWER10/p10hb1/p10hb1_vios_install.htm\)](https://www.ibm.com/support/knowledgecenter/POWER10/p10hb1/p10hb1_vios_install.htm).
 - Install the IBM i operating system. For instructions, see [Installing the IBM i operating system \(http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_ibmi.htm\)](http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_ibmi.htm).
 5. You have now completed the steps to install your server.

Installing a stand-alone server

Use this information to learn about setting up a stand-alone server.

Prerequisite for installing the stand-alone server

Use the information to understand the prerequisites that are required for setting up the preinstalled server.

About this task

You might need to read the following documents before you begin to install the server:

- The latest version of this document is maintained online. See [Installing the IBM Power S1022 \(9105-22A\) and IBM Power L1022 \(9786-22H\) \(http://www.ibm.com/support/knowledgecenter/POWER10/p10jad/p10jad_roadmap.htm\)](http://www.ibm.com/support/knowledgecenter/POWER10/p10jad/p10jad_roadmap.htm).
- To plan your server installation, see [Planning for the system \(http://www.ibm.com/support/knowledgecenter/POWER10/p10jad/p10jad_kickoff.htm\)](http://www.ibm.com/support/knowledgecenter/POWER10/p10jad/p10jad_kickoff.htm).
- To download HMC updates and fixes, see the [Hardware Management Console Support and downloads website \(https://www14.software.ibm.com/webapp/set2/sas/f/hmcl/home.html\)](https://www14.software.ibm.com/webapp/set2/sas/f/hmcl/home.html).

Consider the following prerequisites before you install the server:

Procedure

1. Ensure that you have the following items before you start your installation:
 - Phillips screwdriver
 - Flat-head screwdriver
2. Ensure that you have one of the following consoles:

Installing the IBM Power S1022 (9105-22A), IBM Power S1022s (9105-22B), and IBM Power L1022 (9786-22H) servers **25**

- Hardware Management Console (HMC): To manage POWER10 processor-based systems, the HMC must be at version 10 release 2.0, or later.
- Graphic monitor with keyboard and mouse.
- Teletype (tty) monitor with keyboard.

Moving the server to the installation site

Learn how to move the stand-alone server to the installation site.

About this task

After you have unpacked your stand-alone server, move the server to the installation site.

Completing inventory for your stand-alone server

Use this information to complete inventory for your server.

About this task

To complete the inventory, complete the following steps:

Procedure

1. Verify that you received all the boxes you ordered.
2. Unpack the server components as needed.
3. Complete a parts inventory before you install each server component by following these steps:
 - a. Locate the inventory list for your server.
 - b. Ensure that you received all the parts that you ordered.

Note: Your order information is included with your product. You can also obtain the order information from your marketing representative or the IBM Business Partner.

Cabling the server and setting up a console

Your console, monitor, or interface choices are guided by whether you create logical partitions, which operating system you install in your primary partition, and whether you install a Virtual I/O Server (VIOS) in one of your logical partitions.

Installing the cable-management arm

The cable-management arm is used to efficiently route cables so that you have proper access to the rear of the system. Use the procedure to install the cable-management arm.

About this task

To install the cable-management arm, complete the following steps:

Procedure

1. Ensure that you have the following parts.

Item Description

- | | |
|----------|--------------------------------|
| A | Inner cable management arm tab |
| B | Inner mounting bracket |
| C | Outer cable management arm tab |
| D | Outer mounting bracket |

Item Description

E Extension tab

F Outer cable management arm tab

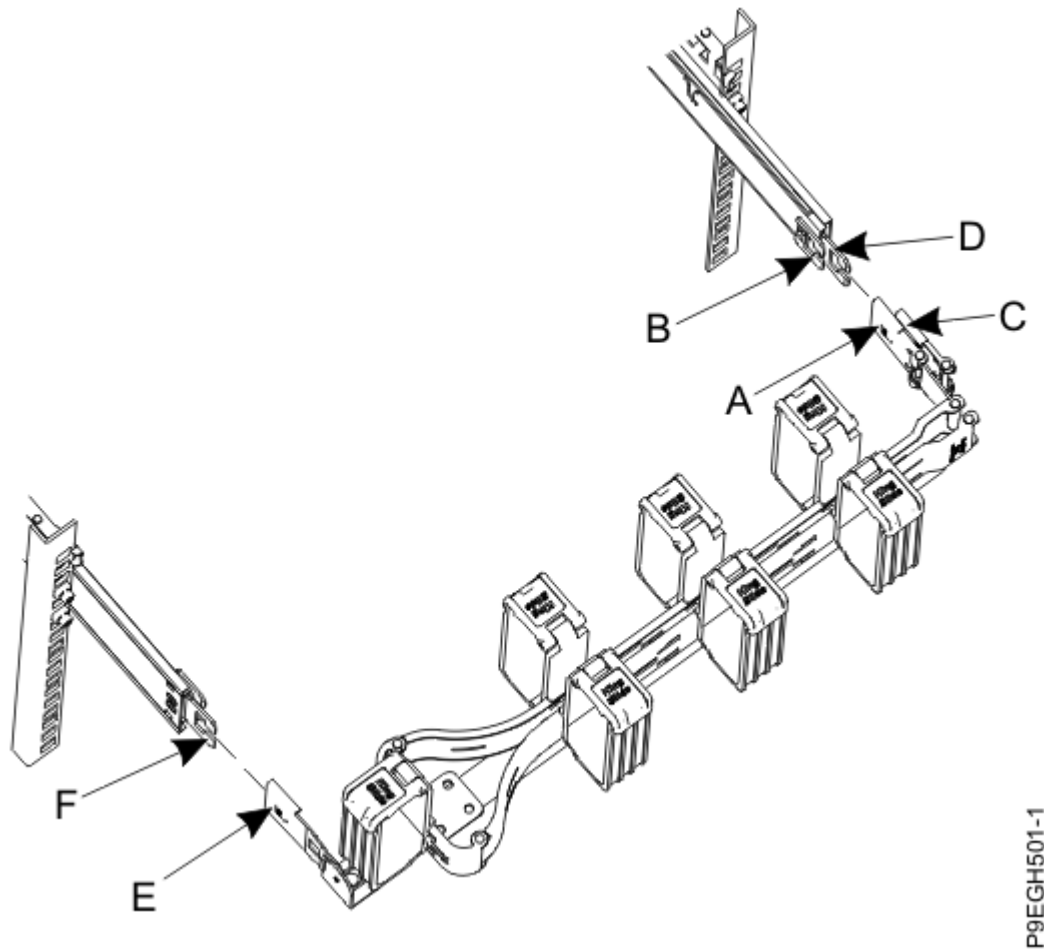


Figure 15. Relative positions of the parts of the cable-management arm before assembly

2. The cable-management arm can be installed on either side of the server. For this procedure, it is illustrated that you are installing it on the right side, while you are facing the server from the rear. If you want to install the cable management arm on the other side of the rack, you can press the button on the extension tab **(1)** so that it swivels in the opposite direction **(2)**.

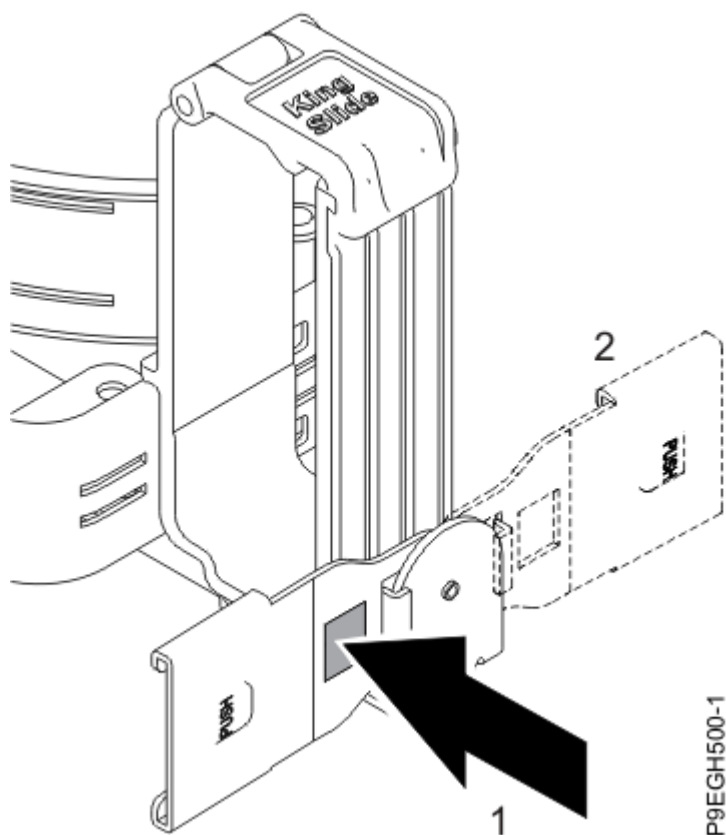


Figure 16. Swiveling the cable management arm extension tab

3. Insert the inner cable management arm tab (A) to the inner mounting bracket (B) until the outer mounting bracket (D) clicks into place.

Note: To avoid damage when the system is placed in the service position, ensure that the middle pin is between each arm.

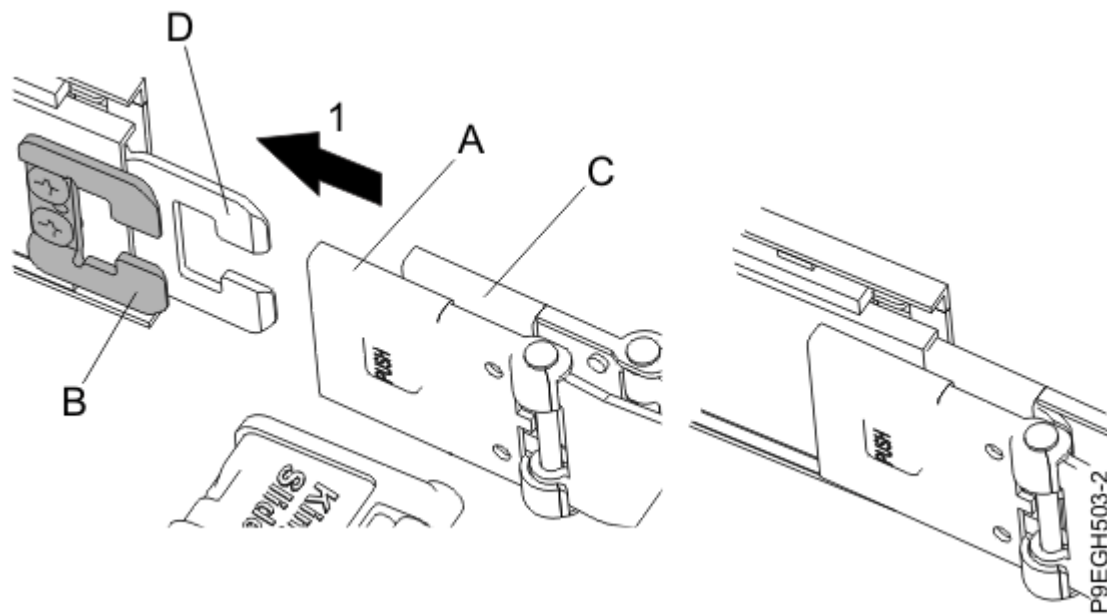


Figure 17. Inserting the mounting brackets

4. On the opposite side of the rack, insert the extension tab (E) to the outer cable management arm tab (F) until it clicks into place.

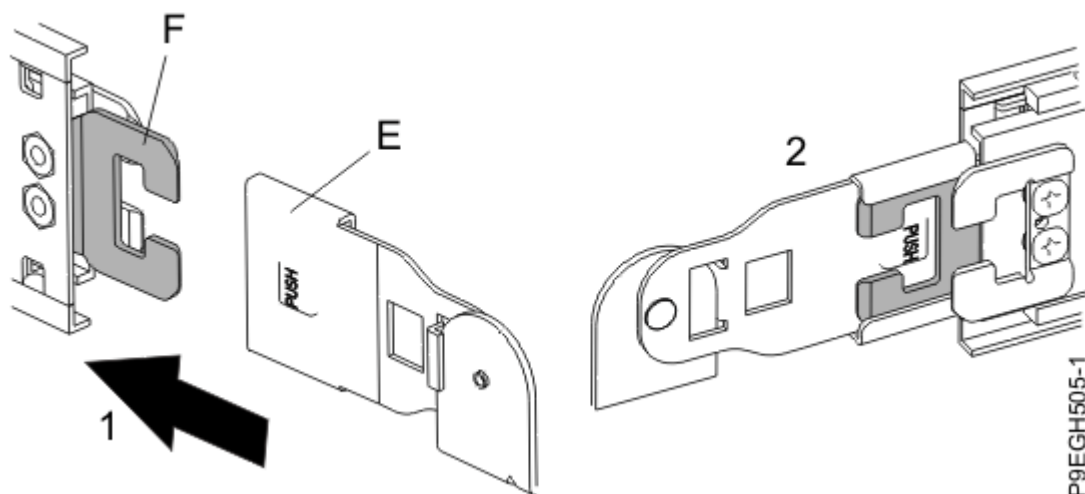


Figure 18. Attaching the extension tab to the cable management arm to the outer cable management arm tab

5. To route the cables through the cable management arm, press the latches on the cable management arm to open the baskets, route the cables through the arm, and then re-latch the baskets until they are fully seated.

Determining which console to use

Your console, monitor, or interface choices are guided by whether you create logical partitions, which operating system you install in your primary partition, and whether you install a Virtual I/O Server (VIOS) in one of your logical partitions.

Go to the instructions for the applicable console, interface, or terminal in the following table.

Table 3. Available console types				
Console type	Operating system	Logical partitions	Cable required	Setup instructions
ASMI	AIX, Linux, or VIOS	Yes	Serial cable equipped with a null modem	Logging on to the ASMI GUI (http://www.ibm.com/support/knowledgecenter/POWER10/p10eih/p10eih_gui_login.htm)
Hardware Management Console (HMC)	AIX, IBM i, Linux, or VIOS	Yes	Ethernet (or cross-over cable)	Managing eBMC-based systems (http://www.ibm.com/support/knowledgecenter/POWER10/p10eih/p10eih_ebmc_hmc.htm)

Table 3. Available console types (continued)				
Console type	Operating system	Logical partitions	Cable required	Setup instructions
Operations Console	IBM i	Yes Use your Operations Console to manage existing IBM i partitions.	Ethernet cable for LAN connection	Managing eBMC-based systems (http://www.ibm.com/support/knowledgecenter/POWER10/p10jad/p10jad_cable_ops.htm).

Cabling the server and accessing Operations Console

You can use Operations Console to manage a server that is running the IBM i operating system even if you do not have logical partitions.

Before you begin

You can access the Operations Console via a LAN connection to IBM i by using [IBM i Access Client Solutions](http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805) (<http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805>).

To cable the server and to access the Operations Console, complete the following steps:

1. Ensure that your server is powered off.
2. Obtain a static IP address that is assigned to the LAN console adapter on the server so that the console can use it. Note the Internet Protocol (IP) address, subnet mask, and default gateway. Optionally, select a unique host name and register the host name and the IP address in your site's Domain Name System (DNS).

Note: This IP address is used by the Operations Console stack on the IBM i interface and is different from the IP address that is used to connect a normal Telnet session. The IP address must not be in use by another server. Ping the IP address on a PC connected to a network to verify that no other device is using the IP address. You should not receive replies.

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To set up the Operations Console, complete the following steps:

1. Install IBM i Access Client Solutions (ACS) (<http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805>) on a network-connected personal computer.

Note: To run IBM i Access Client Solutions (ACS) on a workstation, you must install Java. ACS is a Java-based program and Java is required to run ACS. For information about ACS Java requirements, see [IBM i Access - ACS Getting Started](https://www.ibm.com/support/pages/ibm-i-access-accs-getting-started#3.0) (<https://www.ibm.com/support/pages/ibm-i-access-accs-getting-started#3.0>).

Note: It is recommended that you log onto the PC as the local administrator. This ensures that you have all the privileges that you need to modify the PC and to start a console session. Also, ensure that you are running the latest version of ACS. For more information, see [IBM i Access - Client Solutions 5733XJ1](https://www.ibm.com/support/pages/ibm-i-access-client-solutions-5733xj1) (<https://www.ibm.com/support/pages/ibm-i-access-client-solutions-5733xj1>).

2. Cable the PC to a server. Plug a Cat 5e or Cat 6 (recommended) Ethernet cable to the PC and into a valid Ethernet adapter port. To determine the server adapter port that you must use, refer to the following table:

Note: The T1 resource is required for console connectivity on any adapter. The T1 resource is either the top or far-right port depending on how you are viewing the system.

Table 4. Server Operations Console LAN slots	
Server	Operations Console - LAN slot
9105-41B	C7, C8, C9, C10, C11
9105-22A, 9105-22B, 9105-42A, 9786-22H, or 9786-42H	C0, C1, C2, C3, C4, C7, C8, C9, C10, C11

Note: Make the initial connection with the PC that is directly cabled to the server. The PC and server can be re-cabled to the network after the initial connection is made and a static IP address has been assigned to the Operations Console port. A cross-over cable is not needed. For more information, see [Adapter requirements](http://www.ibm.com/support/knowledgecenter/POWER10/p10hbx/hardwarereq_adapter.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hbx/hardwarereq_adapter.htm)

3. Configure the PC network. To configure the PC network, complete the following steps:
 - a. Open Windows Control Panel and access the adapter settings. If you are using Windows 10, select **Control Panel > Network and Internet > Network and Sharing Center > Change Adapter Settings**.
 - b. Disable any additional adapters other than the Local Area Connection.
 - c. Right click the adapter and select **Properties**.
 - d. Click **Internet Protocol Version 4 (TCP/IPv4)** and select **Properties**.

Note: If you are returning the device to the network after you set up the Operations Console, record the IP information that is displayed.
 - e. Select **Obtain an IP address automatically**. This ensures that the PC receives an IP address in the 169.254.x.x range.

4. To disable the PC firewall, complete the following steps.

Note: All PC firewalls must be disabled for the initial connection.

- a. In the Windows control panel, click **Firewall settings** and disable the firewall.
 - b. In the Windows control panel, click **Security center**. Check for a firewall and, if present, disable it.
 - c. Scan all tasks that are running on the PC for any other software firewalls and disable the firewall.
5. Power on the server by completing the following steps:
 - a. Set the manual initial program load (IPL) by completing the following steps:
 - i) Locate the server's control panel.
 - ii) Press the Up arrow key until you see **02**, and press Enter.
 - iii) Press Enter again. A < (less than symbol) appears next to **N**.
 - iv) Press the Up Arrow key. The **N** changes to an **M**.
 - v) Press Enter.
 - vi) Press Enter twice. A **02** is displayed on the control panel.
 - b. After you have the server set to a manual IPL, push the white power button to power on the server.

Note: During the IPL, the system displays C6004031 on the control panel, which indicates that the system is searching for an Operations Console. The system might take 20 - 30 minutes to complete this action. If A6005008 is displayed on the control panel, this means that no Operations Console is available. This might indicate that the system is not preinstalled with IBM i and you must set the console type to LAN.

6. Perform this step if the system is not preinstalled with IBM i. For setting the console type to LAN, complete the following steps:
 - a. Enable the control panel functions by completing the following steps:
 - i) Select function 25 on the control panel and press Enter. The return code must be 00.

ii) Select function 26 on the control panel and press Enter.

Note: If you see a FF return code, go back to function 25 and press Enter, then return to function 26 and press Enter.

b. Check your current setting(s). Use console service functions (65+21+11) to check the current setting.

- A600 500A = No console defined
- A603 500A = LAN console
- A604 500A = HMC console

If the system reference code (SRC) = A603500A, skip to step [“7” on page 32](#). For all others SRCs, continue with the next step.

c. Set console type to LAN.

For release 7.4 and earlier, complete the following steps.

- i) Use the 65+21+11 sequences until it returns A603500B. This indicates that the console type will be changed to LAN.
- ii) Use the 21. This performs the change console type function.
- iii) Use the 11, until it returns A6C3500C. This indicates that settings have been saved successfully. If not, repeat function 11 until it returns A6C3500C

d. For release 7.5 and later, complete the following steps.

- i) Use the 65+11 sequences until it returns A603500B. This indicates that the console type will be changed to LAN.
- ii) Use the 21. This performs the change console type function.
- iii) Use the 11, until it returns A6C3500C. This indicates that settings have been saved successfully. If not, repeat function 11 until it returns A6C3500C

Note: 65+21+11 functions are no longer needed unless directed by IBM support. The functions to set an adapter location are now performed automatically by the Licensed Internal Code.

7. Connect the Operations Console by completing the following steps:

- a. Open IBM i Access Client Solutions (ACS).
- b. Under Management, click **System Configurations**.
- c. Select **Locate Console**.
- d. Click **Search**. After a few seconds, a connection displays. Click the connection and then click **Console**.
- e. In the Pending Authorization window, type the User ID and Password.
- f. Accept the security certificate. Ensure that you accept it, otherwise your connection will not continue. A console window opens. If the window is blank at first but the cursor is in the upper left corner, it means that the screen is waiting for the Drive or DVD to provide the information to be displayed.

8. To set a static IP address for the Operations Console, complete the following steps:

- a. Sign on with QSECOFR. The default password is QSECOFR, and it is case-sensitive.
- b. At the DST Main Menu **b**, select Option 3- **Use Dedicated Service Tools**.
- c. Select **Option 5- Work with DST environment**.
- d. Select **Option 2- System Devices**.
- e. Select **Option 7- Configure service tools LAN adapter**.
- f. Type the IP settings that you want to use. *Optional:* For the host name for Service Tools, you can type a host name if it is also registered in your network DNS. It is recommended that you type the word Default and enter the IP address that you want to use.
- g. Press F7 to store the information.

- h. Press F17 to **Deactivate** the session and then press it again to **Activate**. This causes your session to go blank. Close the session.
9. To create a connection to the static IP, complete the following steps:
 - a. Either move the PC and Operations Console port both to the network or re-configure the PC IP settings to be in the same subnet that you just configured for the service tools LAN adapter.
 - b. Return to the ACS interface and select the window labeled System Configurations.
 - c. Click **New**.
 - d. If you will use this connection to connect to other functions, type the system name that you plan to use in the General tab.
 - e. Click the **Console** tab.
 - f. Under the LAN Console/Virtual Control panel, type the IP address of the service tools LAN adapter in the Service Host Name field.
 - g. Click **OK**.
 - h. In the main ACS menu, click **System** and select the system that you created.
 - i. Under Console, click **5250 Console**. Continue with your IPL.

Note: The IP configuration of the PC must be reset before cabling the PC back to the network because the PC is configured with the gateway IP address. The PC and server console port (T1) can now be re-cabled to the network.

Continue with [“Completing the server setup” on page 23](#).

Cabling the server and connecting expansion units

Learn how to cable the server and to connect expansion units.

About this task

To cable the server and to connect expansion units, complete the following steps:

Procedure

1. Ensure that you have cabled and set up a console. For more information, see [“Cabling the server and setting up a console” on page 26](#).
 2. Complete the following steps:
 - a. Plug the power cord into the power supply.

Note: If present, remove and discard any plug that covers the ports on the rear of the system. The port covers ensure that you are reminded about resetting the Administrator password of your managed system after the initial program load (IPL) completes.
 - b. Plug the system power cords and the power cords for any other attached devices into the power source.
 - c. If your system uses a power distribution unit (PDU), complete the following steps:
 - i) Connect the system power cords from the server and I/O drawers to the PDU with an IEC 320 type receptacle.
 - ii) Attach the PDU input power cord and plug it into the power source.
 - iii) If your system uses two PDUs for redundancy, complete the following steps:
 - If your system has two power supplies, attach one power supply to each of the two PDUs.
 - If your system has four power supplies, plug E0 and E1 to **PDU A** and E2 and E3 to **PDU B**.
- Note:** Confirm that the system is in standby mode. The green power status indicator on the front control panel is flashing, and the dc out indicator lights on the power supplies are flashing. If none of the indicators are flashing, check the power cord connections.

3. For information about connecting enclosures and expansion units, see [Enclosures and expansion units](http://www.ibm.com/support/knowledgecenter/POWER10/p10ham/p10ham_kickoff.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10ham/p10ham_kickoff.htm).
4. Power on the managed system.

Completing the server setup

Learn about the tasks you must complete to set up your managed system.

Install the front door onto the front of the system chassis. To install the front door, complete the following tasks:

1. Align the door with the system chassis so that it is open 90 degrees.
2. Align the hinges on the door with the posts on the chassis.
3. Using your finger, push each hinge onto each pin, one at a time.

Completing the server setup by using an HMC

Perform these tasks to complete the server setup by using a Hardware Management Console (HMC). You can also begin to use virtualization to consolidate multiple workloads onto fewer systems to increase server use, and to reduce cost.

Before you begin

To manage POWER10 processor-based systems, the HMC must be at version 10 release 1.0, or later.

About this task

If your system was preinstalled with an operating system, you must exit manufacturing default configuration (MDC) mode so that you can open a console and access your operating system. To exit MDC mode, complete the following steps:

1. Select **Resources > All Systems**.
2. Select **System > Actions > View System Partitions**.
3. Under Properties, select **General Settings**.
4. Select **Power On Parameters** and set the Partition Start Policy to **User-Initiated**.

To complete the server setup by using an HMC, complete the following steps:

Procedure

1. Change the managed system passwords by completing the following steps:
For more information about setting passwords for the managed system by using the HMC, see [Setting passwords for the managed system](http://www.ibm.com/support/knowledgecenter/POWER10/p10hai/p10hai_setpassword_enh.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hai/p10hai_setpassword_enh.htm).
2. Update the time of day on the managed system by using the Advanced System Management Interface (ASMI).

To connect to the Advanced System Management Interface, complete the following steps:

- a. In the navigation area, click **System resources**, and then select **Systems**.
 - b. In the content area, select one or more managed systems, and then click **Connections and operations > Launch advanced system management (ASMI)**.
3. Check the firmware level on the managed system and update it as needed.
To view and update the system firmware, complete the following steps:
 - a. In the navigation area, click **System resources**, and then select **Systems**.
 - b. To view the firmware information of the system, select the server for which you want to view the firmware information and click **Firmware > View current system firmware levels**.

- c. Compare your installed firmware level with available firmware levels. For more information, see the [Fix Central website](http://www.ibm.com/support/fixcentral) (<http://www.ibm.com/support/fixcentral>).
 - d. If necessary, update your managed system firmware levels. Click **Firmware > Update system firmware**.
 - e. After you complete this task, click **Close**.
4. Compare your installed firmware level with available firmware levels. If necessary, update your firmware levels.
 - a. Compare your installed firmware level with available firmware levels. For more information, see the [Fix Central website](http://www.ibm.com/support/fixcentral) (<http://www.ibm.com/support/fixcentral>).
 - b. If necessary, update your managed system firmware levels. In the navigation area, select **Actions > Update Firmware > System Firmware > Update....**
5. To power on a managed system, see [Starting a system](http://www.ibm.com/support/knowledgecenter/POWER10/p10haj/crustartsys.htm) (<http://www.ibm.com/support/knowledgecenter/POWER10/p10haj/crustartsys.htm>)
6. Create partitions using templates.
 - If you are creating new partitions, you can use the templates that are on your HMC. For more information, see [Accessing the template library](http://www.ibm.com/support/knowledgecenter/POWER10/p10efc/p10efc_accessing_template_library.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10efc/p10efc_accessing_template_library.htm).
 - If you have existing partitions on another system, you can capture those configurations, save it to the template library and deploy the partition template. For more information, see [Partition templates](http://www.ibm.com/support/knowledgecenter/POWER10/p10efc/p10efc_partition_template_concept.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10efc/p10efc_partition_template_concept.htm).
 - If you want to use an existing template from another source, you can import that and use it. For more information, see [Importing a partition template](http://www.ibm.com/support/knowledgecenter/POWER10/p10efc/p10efc_import_partition_template.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10efc/p10efc_import_partition_template.htm).
7. Install an operating system and update the operating system.
 - Install the AIX operating system. For instructions, see [Installing AIX](http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installaix.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installaix.htm).
 - Install the Linux operating system. For instructions, see [Installing Linux](http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installlinux.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installlinux.htm).
 - Install the VIOS operating system. For instructions, see [Installing VIOS](https://www.ibm.com/support/knowledgecenter/POWER10/p10hb1/p10hb1_vios_install.htm) (https://www.ibm.com/support/knowledgecenter/POWER10/p10hb1/p10hb1_vios_install.htm).
 - Install the IBM i operating system. For instructions, see [Installing the IBM i operating system](http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_ibmi.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_ibmi.htm).

Completing the server setup without using an HMC

If you do not have an Hardware Management Console (HMC), use this procedure to complete the server setup.

About this task

To complete the server setup without using a management console, complete the following steps:

Procedure

1. To check the firmware level on the managed system and the time of day, complete the following steps:
 - a. Access the Advanced System Management Interface (ASMI). For instructions, see [Accessing the ASMI without an HMC](http://www.ibm.com/support/knowledgecenter/POWER10/p10hby/connect_asmi.htm) (www.ibm.com/support/knowledgecenter/POWER10/p10hby/connect_asmi.htm).
 - b. On the ASMI Welcome pane, note the existing level of server firmware in the upper-right corner under the copyright statement.
 - c. Update the date and time.

To automatically set the date and time, select **NTP**. Enter the NTP server address or addresses. Click **Save settings**.

To manually set the date and time, Select **Manual**. Enter the date and time. Click **Save settings**.

2. To start a system, complete the following steps:

- a. Open the front door of the managed system.
- b. Press the power button on the control panel.

The power-on light begins to flash faster.

- a. The system cooling fans are activated after approximately 30 seconds and begin to accelerate to operating speed.
- b. Progress indicators appear on the control panel display while the system is being started.
- c. The power-on light on the control panel stops flashing and remains on, indicating that the system is powered on.

For instructions, see [Starting a system that is not managed by an HMC \(www.ibm.com/support/knowledgecenter/POWER10/p10haj/startsysnohmc.htm\)](http://www.ibm.com/support/knowledgecenter/POWER10/p10haj/startsysnohmc.htm).

3. Install an operating system and update the operating system.

- Install the AIX operating system. For instructions, see [Installing AIX \(http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installaix.htm\)](http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installaix.htm).
- Install the Linux operating system. For instructions, see [Installing Linux \(http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installlinux.htm\)](http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installlinux.htm).
- Install the VIOS operating system. For instructions, see [Installing VIOS \(https://www.ibm.com/support/knowledgecenter/POWER10/p10hb1/p10hb1_vios_install.htm\)](https://www.ibm.com/support/knowledgecenter/POWER10/p10hb1/p10hb1_vios_install.htm).
- Install the IBM i operating system. For instructions, see [Installing the IBM i operating system \(http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_ibmi.htm\)](http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_ibmi.htm).

Setting up a preinstalled server

Learn how to set up a server that arrives preinstalled in a rack.

Prerequisite for installing the preinstalled server

Use the information to understand the prerequisites that are required for setting up the preinstalled server.

About this task

You might need to read the following documents before you begin to install the server:

- The latest version of this document is maintained online. See [Installing the IBM Power S1022 \(9105-22A\) and IBM Power L1022 \(9786-22H\) \(http://www.ibm.com/support/knowledgecenter/POWER10/p10jad/p10jad_roadmap.htm\)](http://www.ibm.com/support/knowledgecenter/POWER10/p10jad/p10jad_roadmap.htm).
- To plan your server installation, see [Planning for the system \(http://www.ibm.com/support/knowledgecenter/POWER10/p10jad/p10jad_kickoff.htm\)](http://www.ibm.com/support/knowledgecenter/POWER10/p10jad/p10jad_kickoff.htm).

Consider the following prerequisites before you install the server:

Procedure

1. Ensure that you have the following items before you start your installation:
 - Phillips screwdriver
 - Flat-head screwdriver
2. Ensure that you have one of the following consoles:

- Hardware Management Console (HMC): To manage POWER10 processor-based systems, the HMC must be at version 10 release 2.0, or later.
- Graphic monitor with keyboard and mouse.
- Teletype (tty) monitor with keyboard.

Completing inventory for your preinstalled server

Use this information to complete inventory for your server.

About this task

To complete the inventory, complete the following steps:

Procedure

1. Verify that you received all the boxes you ordered.
2. Unpack the server components as needed.
3. Complete a parts inventory before you install each server component by following these steps:
 - a. Locate the inventory list for your server.
 - b. Ensure that you received all the parts that you ordered.

Note: Your order information is included with your product. You can also obtain the order information from your marketing representative or the IBM Business Partner.

Removing the shipping bracket and connecting power cords and power distribution unit (PDU) for your preinstalled server

Before you set up a console, you must remove the shipping bracket and connect power cords.

About this task



Attention:

- Attach an electrostatic discharge (ESD) wrist strap to the front ESD jack, to the rear ESD jack, or to an unpainted metal surface of your hardware to prevent the electrostatic discharge from damaging your hardware.
- When you use an ESD wrist strap, follow all electrical safety procedures. An ESD wrist strap is used for static control. It does not increase or decrease your risk of receiving electric shock when using or working on electrical equipment.
- If you do not have an ESD wrist strap, just prior to removing the product from ESD packaging and installing or replacing hardware, touch an unpainted metal surface of the system for a minimum of 5 seconds.

To remove the shipping bracket and connect power cords, do the following:

Procedure

1. Remove the two thumbscrews that secure the shipping bracket to the chassis.
2. Cable the server.
 - a. Connect the system power cords from the server and I/O drawers to the PDU with an IEC 320 type receptacle.
 - b. Attach the PDU input power cord and plug it into the power source.

Setting up a console

Your console, monitor, or interface options are guided by how you want to use the system.

Accessing the eBMC so that you can manage the system

IBM® Power Systems servers use an enterprise baseboard management controller (eBMC) for system service management, monitoring, maintenance, and control. The eBMC also provides access to the system event log files (SEL). The eBMC is a specialized service processor that monitors the physical state of the system by using sensors. A system administrator or service representative can communicate with the eBMC through an independent connection.

About this task

Important: Intelligent Platform Management Interface (IPMI) is disabled by default on your system. Inherent security vulnerabilities are associated with using the IPMI. Consider using Redfish APIs or the GUI to manage your system. You must enable the IPMI and authorize the user before you can use the service.

Note: To manage your system using the eBMC using your HMC, your HMC must be at Version 10 Release 1 Service Pack 1020, or later.

To access the eBMC by using your HMC, complete the following steps:

Procedure

1. Identify the port on the HMC that is enabled as a DHCP server and connect the new system to the managed system network.
2. The HMC discovers the system and assigns it a default name. The name is the DHCP IP address you are using, without the decimals. The BMC displays the **Pending Authentication** state.
3. You are prompted to set the ID and password that your HMC will use to authenticate and manage the system (the default password is expired). This is the same ID and password that you will use to access the ASMI. To set the system password, select the BMC, then select **Actions > Update System Password**.
4. Click **Finish**.
5. Select **System Actions > VMI configuration**. Select the network interface, then select **Modify**.
Note: You can choose either T0 or T1. If you previously connected to T0, configure Eth0. If you previously connected to T1 on the HMC network, configure Eth1.
6. Select **DHCP** and click **OK**.
7. Use the HMC to power on the system.
 - a. In the navigation area, select **Resources > All Systems**.
 - b. In the content pane, select the managed system.
 - c. In the navigation area, select **System Actions > Operations > Power On**.

Cabling the server and accessing Operations Console

You can use Operations Console to manage a server that is running the IBM i operating system even if you do not have logical partitions.

Before you begin

You can access the Operations Console via a LAN connection to IBM i by using [IBM i Access Client Solutions](http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805) (<http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805>).

Note:

For more information about supported operating systems with IBM i Access, see [IBM i Access Client Solutions](http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805) (<http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805>).

To cable the server and to access the Operations Console, complete the following steps:

1. Ensure that your server is powered off.
2. Obtain a static IP address that is assigned to the LAN console adapter on the server so that the console can use it. Note the Internet Protocol (IP) address, subnet mask, and default gateway. Optionally, select a unique host name and register the host name and the IP address in your site's Domain Name System (DNS).

Note: This IP address is used by the Operations Console stack on the IBM i interface and is different from the IP address that is used to connect a normal Telnet session. The IP address must not be in use by another server. Ping the IP address on a PC connected to a network to verify that no other device is using the IP address. You should not receive replies.

To set up the Operations Console, complete the following steps:

1. Install **IBM i Access Client Solutions (ACS)** (<http://www-01.ibm.com/support/docview.wss?uid=isg3T1026805>) on a network-connected personal computer.

Note: To run IBM i Access Client Solutions (ACS) on a workstation, you must install Java. ACS is a Java-based program and Java is required to run ACS. For information about ACS Java requirements, see **IBM i Access - ACS Getting Started** (<https://www.ibm.com/support/pages/ibm-i-access-acs-getting-started#3.0>).

Note: It is recommended that you log onto the PC as the local administrator. This ensures that you have all the privileges that you need to modify the PC and to start a console session. Also, ensure that you are running the latest version of ACS. For more information, see **IBM i Access - Client Solutions 5733XJ1** (<https://www.ibm.com/support/pages/ibm-i-access-client-solutions-5733xj1>).

2. Cable the PC to a server. Plug a Cat 5e or Cat 6 (recommended) Ethernet cable to the PC and into a valid Ethernet adapter port. To determine the server adapter port that you must use, refer to the following table:

Note: The T1 resource is required for console connectivity on any adapter. The T1 resource is either the top or far-right port depending on how you are viewing the system.

Table 5. Server Operations Console LAN slots	
Server	Operations Console - LAN slot
9105-41B	C7, C8, C9, C10, C11
9105-22A, 9105-22B, 9105-42A, 9786-22H, or 9786-42H	C0, C1, C2, C3, C4, C7, C8, C9, C10, C11

Note: Make the initial connection with the PC that is directly cabled to the server. The PC and server can be re-cabled to the network after the initial connection is made and a static IP address has been assigned to the Operations Console port. A cross-over cable is not needed. For more information, see **Adapter requirements** (http://www.ibm.com/support/knowledgecenter/POWER10/p10hbx/hardwarereq_adapter.htm)

3. Configure the PC network. To configure the PC network, complete the following steps:
 - a. Open Windows Control Panel and access the adapter settings. If you are using Windows 10, select **Control Panel > Network and Internet > Network and Sharing Center > Change Adapter Settings**.
 - b. Disable any additional adapters other than the Local Area Connection.
 - c. Right click the adapter and select **Properties**.
 - d. Click **Internet Protocol Version 4 (TCP/IPv4)** and select **Properties**.

Note: If you are returning the device to the network after you set up the Operations Console, record the IP information that is displayed.

- e. Select **Obtain an IP address automatically**. This ensures that the PC receives an IP address in the 169.254.x.x range.

4. To disable the PC firewall, complete the following steps.

Note: All PC firewalls must be disabled for the initial connection.

- a. In the Windows control panel, click **Firewall settings** and disable the firewall.
- b. In the Windows control panel, click **Security center**. Check for a firewall and, if present, disable it.
- c. Scan all tasks that are running on the PC for any other software firewalls and disable the firewall.

5. Power on the server by completing the following steps:

a. Set the manual initial program load (IPL) by completing the following steps:

- i) Locate the server's control panel.
- ii) Press the Up arrow key until you see **02**, and press Enter.
- iii) Press Enter again. A < (less than symbol) appears next to **N**.
- iv) Press the Up Arrow key. The **N** changes to an **M**.
- v) Press Enter.
- vi) Press Enter twice. A **02** is displayed on the control panel.

b. After you have the server set to a manual IPL, push the white power button to power on the server.

Note: During the IPL, the system displays C6004031 on the control panel, which indicates that the system is searching for an Operations Console. The system might take 20 - 30 minutes to complete this action. If A6005008 is displayed on the control panel, this means that no Operations Console is available. This might indicate that the system is not preinstalled with IBM i and you must set the console type to LAN.

6. Perform this step if the system is not preinstalled with IBM i. For setting the console type to LAN, complete the following steps:

a. Enable the control panel functions by completing the following steps:

- i) Select function 25 on the control panel and press Enter. The return code must be 00.
- ii) Select function 26 on the control panel and press Enter.

Note: If you see a FF return code, go back to function 25 and press Enter, then return to function 26 and press Enter.

b. Check your current setting(s). Use console service functions (65+21+11) to check the current setting.

- A600 500A = No console defined
- A603 500A = LAN console
- A604 500A = HMC console

If the system reference code (SRC) = A603500A, skip to step [“7” on page 41](#). For all others SRCs, continue with the next step.

c. Set console type to LAN.

For release 7.4 and earlier, complete the following steps.

- i) Use the 65+21+11 sequences until it returns A603500B. This indicates that the console type will be changed to LAN.
- ii) Use the 21. This performs the change console type function.
- iii) Use the 11, until it returns A6C3500C. This indicates that settings have been saved successfully. If not, repeat function 11 until it returns A6C3500C

d. For release 7.5 and later, complete the following steps.

- i) Use the 65+11 sequences until it returns A603500B. This indicates that the console type will be changed to LAN.
- ii) Use the 21. This performs the change console type function.

- iii) Use the 11, until it returns A6C3500C. This indicates that settings have been saved successfully.
If not, repeat function 11 until it returns A6C3500C

Note: 65+21+11 functions are no longer needed unless directed by IBM support. The functions to set an adapter location are now performed automatically by the Licensed Internal Code.

7. Connect the Operations Console by completing the following steps:

- a. Open IBM i Access Client Solutions (ACS).
- b. Under Management, click **System Configurations**.
- c. Select **Locate Console**.
- d. Click **Search**. After a few seconds, a connection displays. Click the connection and then click **Console**.
- e. In the Pending Authorization window, type the User ID and Password.
- f. Accept the security certificate. Ensure that you accept it, otherwise your connection will not continue. A console window opens. If the window is blank at first but the cursor is in the upper left corner, it means that the screen is waiting for the Drive or DVD to provide the information to be displayed.

8. To set a static IP address for the Operations Console, complete the following steps:

- a. Sign on with QSECOFR. The default password is QSECOFR, and it is case-sensitive.
- b. At the DST Main Menu **b**, select Option 3- **Use Dedicated Service Tools**.
- c. Select **Option 5- Work with DST environment**.
- d. Select **Option 2- System Devices**.
- e. Select **Option 7- Configure service tools LAN adapter**.
- f. Type the IP settings that you want to use. *Optional:* For the host name for Service Tools, you can type a host name if it is also registered in your network DNS. It is recommended that you type the word Default and enter the IP address that you want to use.
- g. Press F7 to store the information.
- h. Press F17 to **Deactivate** the session and then press it again to **Activate**. This causes your session to go blank. Close the session.

9. To create a connection to the static IP, complete the following steps:

- a. Either move the PC and Operations Console port both to the network or re-configure the PC IP settings to be in the same subnet that you just configured for the service tools LAN adapter.
- b. Return to the ACS interface and select the window labeled System Configurations.
- c. Click **New**.
- d. If you will use this connection to connect to other functions, type the system name that you plan to use in the General tab.
- e. Click the **Console** tab.
- f. Under the LAN Console/Virtual Control panel, type the IP address of the service tools LAN adapter in the Service Host Name field.
- g. Click **OK**.
- h. In the main ACS menu, click **System** and select the system that you created.
- i. Under Console, click **5250 Console**. Continue with your IPL.

Note: The IP configuration of the PC must be reset before cabling the PC back to the network because the PC is configured with the gateway IP address. The PC and server console port (T1) can now be re-cabled to the network.

Continue with [“Completing the server setup” on page 23](#).

Connecting expansion units

Use this procedure to route cables through the cable-management arm and to connect expansion units.

About this task

To route cables through the cable-management arm and to connect expansion units, complete the following steps:

Procedure

1. Connect expansion units that were shipped with the system. For more information, see the expansion unit installation book that was shipped with the system. Complete the tasks associated with connecting a preinstalled expansion unit or disk drive enclosure, then return to this document to complete your server setup.
2. Continue with [“Completing the server setup” on page 42](#).

Completing the server setup

Learn about the tasks you must complete to set up your managed system.

Select from the following options:

- [“Completing the server setup by using an HMC” on page 42](#)
- [“Completing the server setup without using an HMC” on page 44](#)

Completing the server setup by using an HMC

Perform these tasks to complete the server setup by using a Hardware Management Console (HMC). You can also begin to use virtualization to consolidate multiple workloads onto fewer systems to increase server use, and to reduce cost.

About this task

To complete the server setup by using an HMC, complete the following steps:

Procedure

1. Change the managed system passwords by completing the following steps:
For more information about setting passwords for the managed system by using the HMC, see [Setting passwords for the managed system](http://www.ibm.com/support/knowledgecenter/POWER10/p10hai/p10hai_setpassword_enh.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hai/p10hai_setpassword_enh.htm).
2. Update the time of day on the managed system by using the Advanced System Management Interface (ASMI).

To connect to the Advanced System Management Interface, complete the following steps:

- a. In the navigation area, click **System resources**, and then select **Systems**.
 - b. In the content area, select one or more managed systems, and then click **Connections and operations > Launch advanced system management (ASMI)**.
3. Check the firmware level on the managed system and update it as needed.
To view and update the system firmware, complete the following steps:
 - a. In the navigation area, click **System resources**, and then select **Systems**.
 - b. To view the firmware information of the system, select the server for which you want to view the firmware information and click **Firmware > View current system firmware levels**.
 - c. Compare your installed firmware level with available firmware levels. For more information, see the [Fix Central website](http://www.ibm.com/support/fixcentral) (<http://www.ibm.com/support/fixcentral>).

- d. If necessary, update your managed system firmware levels. Click **Firmware > Update system firmware**.
 - e. After you complete this task, click **Close**.
4. Compare your installed firmware level with available firmware levels. If necessary, update your firmware levels.
 - a. Compare your installed firmware level with available firmware levels. For more information, see the Fix Central website (<http://www.ibm.com/support/fixcentral>).
 - b. If necessary, update your managed system firmware levels. In the navigation area, select **Actions > Update Firmware > System Firmware > Update...**
5. If your system was preinstalled with an operating system, you must exit MDC (manufacturing default configuration) mode so that you can open a console and access your operating system.
To exit MDC mode, complete the following steps:
 - a. Select **Resources > All Systems**.
 - b. Select **System > Actions > View System Partitions**.
 - c. Under Properties, select **General Settings**.
 - d. Select **Power On Parameters** and set the Partition Start Policy to **User-Initiated**.
 - e. Under System Actions, select **Operations > Power On**.
 - f. Once the system is in the *partition standby* state and the default partition is in the *Not Activated* state, select the default partition and choose **Activate**.

For more information about starting a system or logical partition by using the HMC, see [Starting a system or logical partition by using the HMC](#).
6. To power on a managed system, see [Starting a system](http://www.ibm.com/support/knowledgecenter/POWER10/p10haj/crustartsys.htm) (<http://www.ibm.com/support/knowledgecenter/POWER10/p10haj/crustartsys.htm>)
7. Create partitions using templates.
 - If you are creating new partitions, you can use the templates that are on your HMC. For more information, see [Accessing the template library](http://www.ibm.com/support/knowledgecenter/POWER10/p10efc/p10efc_accessing_template_library.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10efc/p10efc_accessing_template_library.htm).
 - If you have existing partitions on another system, you can capture those configurations, save it to the template library and deploy the partition template. For more information, see [Partition templates](http://www.ibm.com/support/knowledgecenter/POWER10/p10efc/p10efc_partition_template_concept.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10efc/p10efc_partition_template_concept.htm).
 - If you want to use an existing template from another source, you can import that and use it. For more information, see [Importing a partition template](http://www.ibm.com/support/knowledgecenter/POWER10/p10efc/p10efc_import_partition_template.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10efc/p10efc_import_partition_template.htm).
8. Install an operating system and update the operating system.
 - Install the AIX operating system. For instructions, see [Installing AIX](http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installaix.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installaix.htm).
 - Install the Linux operating system. For instructions, see [Installing Linux](http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installlinux.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installlinux.htm).
 - Install the VIOS operating system. For instructions, see [Installing VIOS](https://www.ibm.com/support/knowledgecenter/POWER10/p10hb1/p10hb1_vios_install.htm) (https://www.ibm.com/support/knowledgecenter/POWER10/p10hb1/p10hb1_vios_install.htm).
 - Install the IBM i operating system. For instructions, see [Installing the IBM i operating system](http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_ibmi.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_ibmi.htm).

Completing the server setup without using an HMC

If you do not have an Hardware Management Console (HMC), use this procedure to complete the server setup.

About this task

To complete the server setup without using a management console, complete the following steps:

Procedure

1. To check the firmware level on the managed system and the time of day, complete the following steps:
 - a. Access the Advanced System Management Interface (ASMI). For instructions, see [Accessing the ASMI without an HMC](http://www.ibm.com/support/knowledgecenter/POWER10/p10hby/connect_asmi.htm) (www.ibm.com/support/knowledgecenter/POWER10/p10hby/connect_asmi.htm).
 - b. On the ASMI Welcome pane, note the existing level of server firmware in the upper-right corner under the copyright statement.
 - c. Update the date and time.

To automatically set the date and time, select **NTP**. Enter the NTP server address or addresses. Click **Save settings**.

To manually set the date and time, Select **Manual**. Enter the date and time. Click **Save settings**.

2. To start a system, complete the following steps:
 - a. Open the front door of the managed system.
 - b. Press the power button on the control panel.

The power-on light begins to flash faster.

- a. The system cooling fans are activated after approximately 30 seconds and begin to accelerate to operating speed.
- b. Progress indicators appear on the control panel display while the system is being started.
- c. The power-on light on the control panel stops flashing and remains on, indicating that the system is powered on.

For instructions, see [Starting a system that is not managed by an HMC](http://www.ibm.com/support/knowledgecenter/POWER10/p10haj/startsysnohmc.htm) (www.ibm.com/support/knowledgecenter/POWER10/p10haj/startsysnohmc.htm).

3. Install an operating system and update the operating system.
 - Install the AIX operating system. For instructions, see [Installing AIX](http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installaix.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installaix.htm).
 - Install the Linux operating system. For instructions, see [Installing Linux](http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installlinux.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_installlinux.htm).
 - Install the VIOS operating system. For instructions, see [Installing VIOS](https://www.ibm.com/support/knowledgecenter/POWER10/p10hb1/p10hb1_vios_install.htm) (https://www.ibm.com/support/knowledgecenter/POWER10/p10hb1/p10hb1_vios_install.htm).
 - Install the IBM i operating system. For instructions, see [Installing the IBM i operating system](http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_ibmi.htm) (http://www.ibm.com/support/knowledgecenter/POWER10/p10hdx/p10hdx_ibmi.htm).

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Homologation statement

This product may not be certified in your country for connection by any means whatsoever to interfaces of public telecommunications networks. Further certification may be required by law prior to making any such connection. Contact an IBM representative or reseller for any questions.

Accessibility features for IBM Power servers

Accessibility features assist users who have a disability, such as restricted mobility or limited vision, to use information technology content successfully.

Overview

The IBM Power servers include the following major accessibility features:

- Keyboard-only operation
- Operations that use a screen reader

The IBM Power servers use the latest W3C Standard, [WAI-ARIA 1.0](http://www.w3.org/TR/wai-aria/) (www.w3.org/TR/wai-aria/), to ensure compliance with [ICT Accessibility 508 Standards and 255 Guidelines](https://www.access-board.gov/ict/) (<https://www.access-board.gov/ict/>) and [Web Content Accessibility Guidelines \(WCAG\) 2.0](http://www.w3.org/TR/WCAG20/) (www.w3.org/TR/WCAG20/). To take advantage of accessibility features, use the latest release of your screen reader and the latest web browser that is supported by the IBM Power servers.

The IBM Power servers online product documentation in IBM Documentation is enabled for accessibility. For more information about IBM's commitment to accessibility, see the IBM accessibility website at [IBM Accessibility](https://www.ibm.com/able/) (<https://www.ibm.com/able/>).

Keyboard navigation

This product uses standard navigation keys.

Interface information

The IBM Power servers user interfaces do not have content that flashes 2 - 55 times per second.

The IBM Power servers web user interface relies on cascading style sheets to render content properly and to provide a usable experience. The application provides an equivalent way for low-vision users to use system display settings, including high-contrast mode. You can control font size by using the device or web browser settings.

The IBM Power servers web user interface includes WAI-ARIA navigational landmarks that you can use to quickly navigate to functional areas in the application.

Vendor software

The IBM Power servers include certain vendor software that is not covered under the IBM license agreement. IBM makes no representation about the accessibility features of these products. Contact the vendor for accessibility information about its products.

Related accessibility information

In addition to standard IBM help desk and support websites, IBM has a TTY telephone service for use by deaf or hard of hearing customers to access sales and support services:

TTY service
800-IBM-3383 (800-426-3383)
(within North America)

For more information about the commitment that IBM has to accessibility, see [IBM Accessibility](http://www.ibm.com/able) (www.ibm.com/able).

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Electronic emission notices

When attaching a monitor to the equipment, you must use the designated monitor cable and any interference suppression devices supplied with the monitor.

Class A Notices

The following Class A statements apply to the IBM servers that contain the Power10 processor and its features unless designated as electromagnetic compatibility (EMC) Class B in the feature information.

When attaching a monitor to the equipment, you must use the designated monitor cable and any interference suppression devices supplied with the monitor.

The following Class A statements apply to the servers.

Canada Notice

CAN ICES-3 (A)/NMB-3(A)

European Community and Morocco Notice

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This product may cause interference if used in residential areas. Such use must be avoided unless the user takes special measures to reduce electromagnetic emissions to prevent interference to the reception of radio and television broadcasts.

Warning: This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.

Germany Notice

Deutschsprachiger EU Hinweis: Hinweis für Geräte der Klasse A EU-Richtlinie zur Elektromagnetischen Verträglichkeit

Dieses Produkt entspricht den Schutzanforderungen der EU-Richtlinie 2014/30/EU zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55022 / EN 55032 Klasse A ein.

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"Warnung: Dieses ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funk-Störungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen zu ergreifen und dafür aufzukommen."

Deutschland: Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Geräten

Dieses Produkt entspricht dem "Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG)". Dies ist die Umsetzung der EU-Richtlinie 2014/30/EU in der Bundesrepublik Deutschland.

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) (bzw. der EMC Richtlinie 2014/30/EU) für Geräte der Klasse A

Dieses Gerät ist berechtigt, in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen.

Verantwortlich für die Einhaltung der EMV Vorschriften ist der Hersteller:
International Business Machines Corp.
New Orchard Road

Armonk, New York 10504
Tel: 914-499-1900

Der verantwortliche Ansprechpartner des Herstellers in der EU ist:
IBM Deutschland GmbH
Technical Relations Europe, Abteilung M456
IBM-Allee 1, 71139 Ehningen, Germany
Tel: +49 (0) 800 225 5426
email: HalloIBM@de.ibm.com

Generelle Informationen:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022 / EN 55032 Klasse A.

Japan Electronics and Information Technology Industries Association (JEITA) Notice

(一社) 電子情報技術産業協会 高調波電流抑制対策実施
要領に基づく定格入力電力値 : IBM Documentationの各製品
の仕様ページ参照

This statement applies to products less than or equal to 20 A per phase.

高調波電流規格 JIS C 61000-3-2 適合品

This statement applies to products greater than 20 A, single phase.

高調波電流規格 JIS C 61000-3-2 準用品

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- 回路分類 : 6 (単相、P F C回路付)
- 換算係数 : 0

This statement applies to products greater than 20 A per phase, three-phase.

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本装置は、「高圧又は特別高圧で受電する需要家の高調波抑制対策ガイドライン」対象機器（高調波発生機器）です。

- 回路分類 : 5 (3相、P F C回路付)
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VCCI-A

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電話：0800-016-888

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This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment

generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

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This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Responsible Party:
International Business Machines Corporation
New Orchard Road
Armonk, NY 10504
Contact for FCC compliance information only: fccinfo@us.ibm.com

United Kingdom Notice

This product may cause interference if used in residential areas. Such use must be avoided unless the user takes special measures to reduce electromagnetic emissions to prevent interference to the reception of radio and television broadcasts.

Class B Notices

The following Class B statements apply to features designated as electromagnetic compatibility (EMC) Class B in the feature installation information.

When attaching a monitor to the equipment, you must use the designated monitor cable and any interference suppression devices supplied with the monitor.

Canada Notice

CAN ICES-3 (B)/NMB-3(B)

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This product is in conformity with the protection requirements of Directive 2014/30/EU of the European Parliament and of the Council on the harmonization of the laws of the Member States relating to electromagnetic compatibility. IBM cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

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Deutschsprachiger EU Hinweis: Hinweis für Geräte der Klasse B EU-Richtlinie zur Elektromagnetischen Verträglichkeit

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Deutschland: Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Geräten

Dieses Produkt entspricht dem “Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG)“. Dies ist die Umsetzung der EU-Richtlinie 2014/30/EU in der Bundesrepublik Deutschland.

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) (bzw. der EMC Richtlinie 2014/30/EU) für Geräte der Klasse B

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Verantwortlich für die Einhaltung der EMV Vorschriften ist der Hersteller:
International Business Machines Corp.
New Orchard Road
Armonk, New York 10504
Tel: 914-499-1900

Der verantwortliche Ansprechpartner des Herstellers in der EU ist:
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Technical Relations Europe, Abteilung M456
IBM-Allee 1, 71139 Ehningen, Germany
Tel: +49 (0) 800 225 5426
email: HalloIBM@de.ibm.com

Generelle Informationen:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55032 Klasse B

Japan Electronics and Information Technology Industries Association (JEITA) Notice

(一社) 電子情報技術産業協会 高調波電流抑制対策実施
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高調波電流規格 JIS C 61000-3-2 準用品

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- 換算係数 : 0

This statement applies to products greater than 20 A per phase, three-phase.

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VCCI-B

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- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an IBM-authorized dealer or service representative for help.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from IBM-authorized dealers. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Responsible Party:

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